

# TANDBERG

## Director

### User Manual



Software Version E1/B6  
Control Software Version V3.0

D5016402

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**TANDBERG**



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## Environmental Issues

Thank you for buying a product which contributes to a reduction in pollution and thereby helps save the environment.

- Our products reduce the need for travel and transport and thereby reduce pollution.
- Our products have either none or few consumable parts (chemicals, toner, gas, paper).
- Our products are low energy consuming products.

## Production of products

Our factories employ the most efficient environmental methods for reducing waste and pollution and ensuring the products are recyclable.



**WARNING:** TO REDUCE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO WATER OR MOISTURE.

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# Important Information

Please review this manual and the REAR PROJECTION SMART BOARD™ 3000i INSTALLATION GUIDE carefully before setting up and using the Director videoconferencing system. With proper care, your system should provide years of trouble-free service.



**WARNING:** THE PROJECTOR INSIDE THE CABINET IS A HIGH-BRIGHTNESS LIGHT SOURCE. DO NOT STARE INTO THE BEAM OF LIGHT OR VIEW IT DIRECTLY. PREVENT CHILDREN FROM STARING DIRECTLY INTO THE BEAM OF LIGHT.



**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.



**WARNING FOR EUROPEAN CUSTOMERS:**

THE 3000i SHOULD *ONLY* BE USED WITH EUROPEAN TN AND TT POWER DISTRIBUTION SYSTEMS.

THE 3000i IS *NOT* SUITABLE FOR OLDER, IT-TYPE POWER DISTRIBUTION SYSTEMS FOUND IN SOME EUROPEAN COUNTRIES. "THIS SYSTEM (IT-TYPE) IS WIDELY USED ISOLATED FROM EARTH, IN SOME INSTALLATIONS IN FRANCE, WITH IMPEDANCE TO EARTH, AT 230/400V, AND IN NORWAY, WITH VOLTAGE LIMITER, NEUTRAL NOT DISTRIBUTED, AT 230V LINE-TO-LINE." (IEC 60950:1999).

CONTACT QUALIFIED PERSONNEL IF YOU'RE UNCERTAIN OF THE TYPE OF POWER SYSTEM AVAILABLE WHERE YOU'RE INSTALLING YOUR 3000i.

## Other Warnings and Safety Precautions

For operating safety and to avoid damage to the unit, follow these instructions.

- Move the cabinet with care. Quick stops, excessive force and uneven surfaces can overturn the cabinet.
- When you transport the Director, *only* ship the cabinet in the upright position and never lay the interactive whiteboard face down. In addition, ensure that the projector is secure by tightening the projector adjustment knob, locking bolt and two shipping straps.
- If you transport the Director over a distance, we strongly urge you to completely repackage it using the original packaging. This packaging for the Director was designed with optimal shock and vibration protection. If the original packaging is no longer available, pack all components with as much padding as reasonably possible to ensure that they are not exposed to excessive vibration or shock.
- If cabinet assembly is required, we strongly recommend that at least two people perform this task.
- *Do not* touch the rear surface of the interactive whiteboard or apply isopropyl alcohol, water or acetone. If any of these fluids come into contact with this surface, the diffusion coating on the rear of the interactive whiteboard will be damaged, resulting in a permanent deterioration in display quality.

- If you inadvertently smudge the rear surface of the interactive whiteboard, wipe it carefully with a soft cloth and alcohol-free glass cleaner. *Do not* spray the glass cleaner directly onto the surface; spray it *lightly* on the cloth, and then gently dab the rear surface of the interactive whiteboard until the marks are removed.
- The 3000i uses digital cameras that are located inside the bezel. If you allow excess glass cleaner to flow into the crack between the bezel and the writing surface, these cameras could be damaged.
- Avoid setting up and using the Director in an area with excessive levels of dust, humidity and cigarette smoke.
- Lock the casters after you set up the cabinet, so it remains stationary while in use.
- Avoid exposing the Director to extreme heat or cold. The operating temperature range is from 41 °F to 85 °F (5 °C to 29 °C) with up to 80% humidity (non-condensing). The shipping and storage range is from -4 °F to 95 °F (-20 °C to 35 °C) with up to 80% humidity (non-condensing).
- Unplug the cabinet during electrical storms or if you won't use it for an extended period of time.
- This product is equipped with a three-wire grounding-type plug. This plug will only fit into a grounding-type power outlet. If you are unable to insert the plug into the outlet, have your electrician replace the obsolete outlet. Do not circumvent the safety features of the grounding-type plug.
- Handle the power cord carefully and avoid excessive bending. Route the power cord so its unlikely to be walked on or pinched by items placed upon or against it. Do not modify the power cord.
- The socket outlet shall be installed near to the equipment and shall be easily accessible.
- Never do any installation of cables without first unplugging the Director's power cord.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninstalled telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- 1TR6 network type is not approved for connection directly to the telecommunications network. This network type is only to be used behind a PABX.
- X.21 network type is not approved for connection directly to the telecommunications network. This network type is only to be used together with already approved equipment, and is not meant for direct connections to the telecommunication networks.
- V.35/RS-449/RS-366 network type is not approved for connection directly to the telecommunications network. This network type is only to be used together with already approved equipment, and is not intended for direct connection to the telecommunication networks.
- Allow adequate air circulation to prevent internal heat build-up. Do not block any of the ventilation openings of the apparatus.
- Do not install the system in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

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# Introduction

## Welcome to the TANDBERG Director

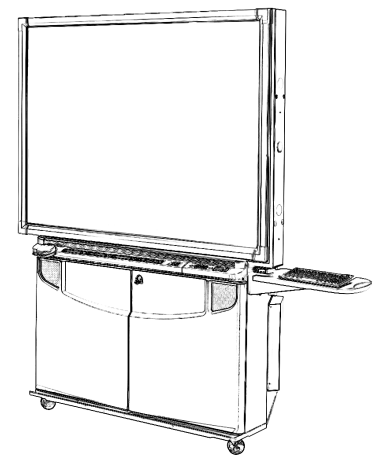
The TANDBERG Director is a multimedia and videoconferencing system that is integrated into the Rear Projection SMART Board™ 3000i system.

The core component of the Director, the DAM (Director Applications Module) is a 19" rack mountable unit that provides all the necessary audio, video, network, and control connections for videoconferencing. The intuitive on-screen controls provide configuration of multiple simultaneous displays from a variety of sources. Annotation over the PC image is possible in a variety of colors and can be viewed by both the local and remote participants (software provided for annotation, see INSTALLATION AND CONFIGURATION manual).

An optional color touch panel provides desktop control of the system. Please refer to APPENDIX 7 for touch panel information.

### Design features

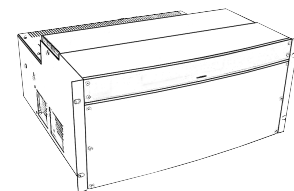
- 67" display with on-screen touch controls
- Integrated mobile stand with electronic annotation markers and storage for multiple peripherals such as a PC and VCR
- W.A.V.E II (wide angle view) camera with extensive zoom, pan & tilt
- Ability to add a laptop with auto-detect switching capability



SMART Board™ 3000i

### Application features

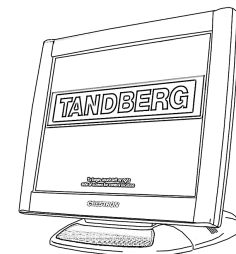
- Join up to 4 video sites and 1 audio site with embedded MultiSite™ functionality
- Powerful live presentations through one-step PC plug-in (PC Presenter™) or LAN connection (PC SoftPresenter™)
- View presentations and multiple video sites simultaneously on one screen using DuoVideo™
- Display images from PCs, DVDs, VCRs, document cameras and other input devices
- Annotate over any PC program and display annotations to all conference participants



DAM  
(Director Applications Module)

### Performance features

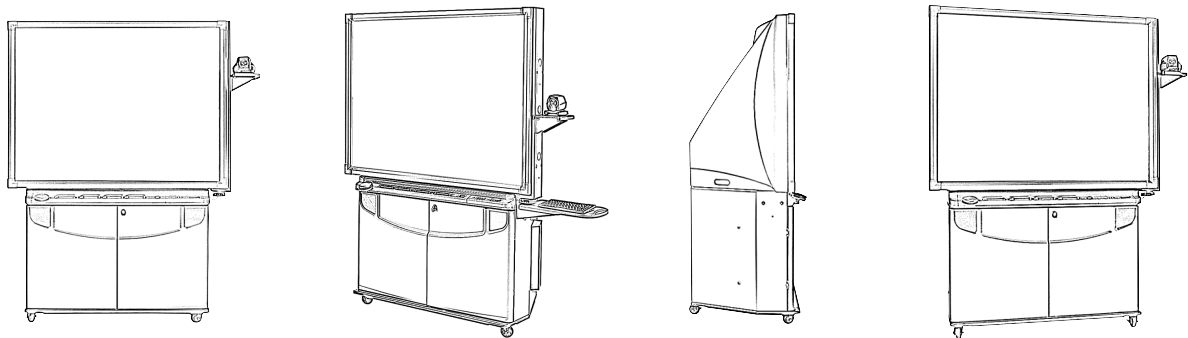
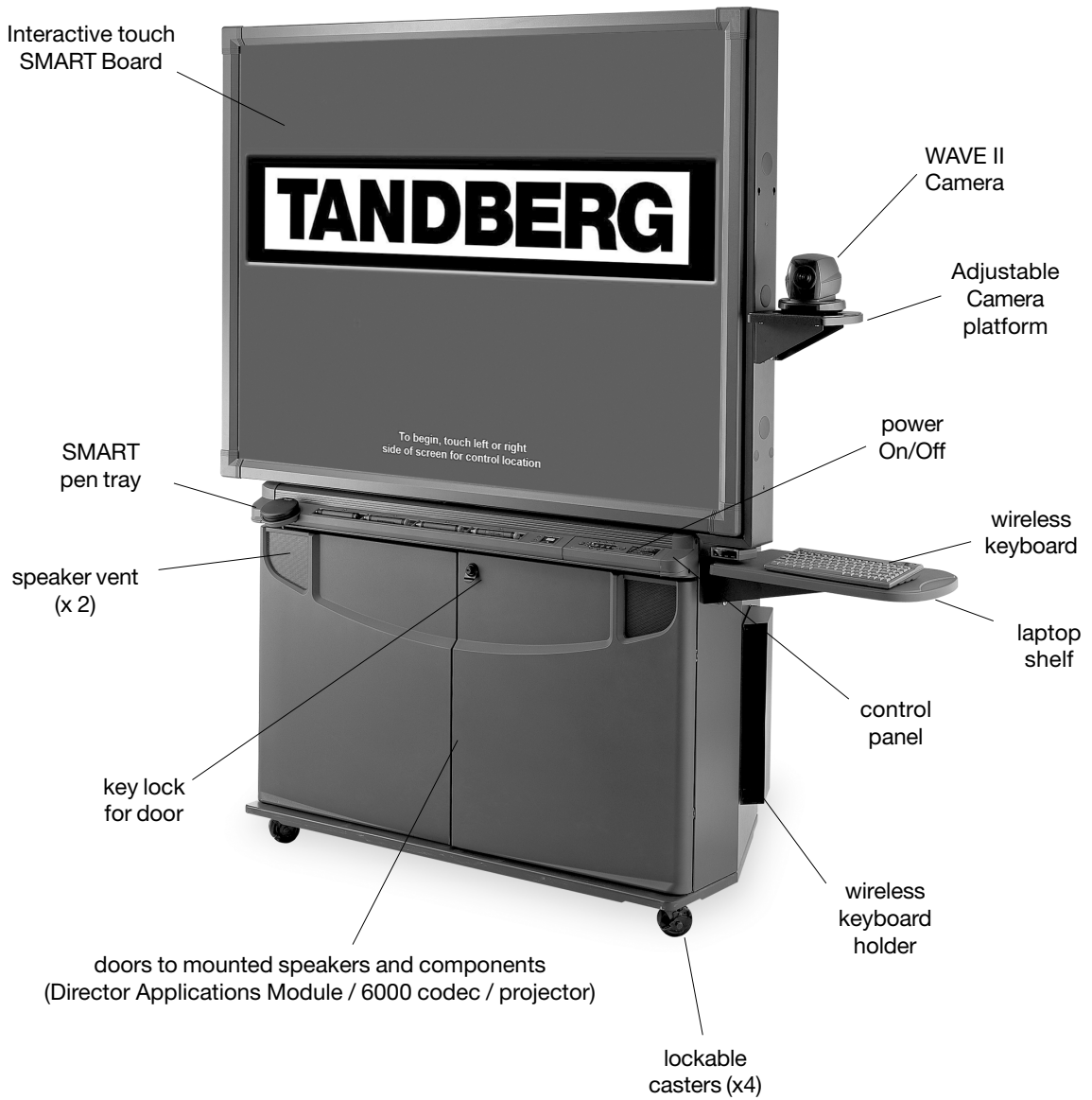
- Choice of network: IP, ISDN and other external network
- Bandwidth: up to 2 Mbps ISDN / 3 Mbps IP
- Highest level of standards-based embedded encryption
- Protection against network interruptions with automatic DownsPEEDING™



Touch Panel



# At a Glance: The TANDBERG Director



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## System Overview

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The TANDBERG Director system is comprised of the following, as well as optional components that can and will enhance your videoconferencing experience.

### Control Interface

#### **Director Application Module (DAM)**

The Director Application Module is an integrated control, presentation, and videoconferencing system. Using a TANDBERG 6000 codec, coupled with a video-scaling control system, allows effective local presentations as well as videoconferencing. The module has an easy access rear I/O panel that allows for connections to various A/V and control devices. The XGA resolution output can be displayed on projectors, plasmas, or monitors. The 5U high, rack mountable package allows for easy integration into classrooms, boardrooms, or podiums.

#### **Interactive SMART Board™**

The Director can be used with the SMART Board™ 3000i as the touch input device. This allows the user to conduct a local presentation or videoconference by selecting intuitive controls displayed on the board. Using the SMART Board™ also allows for on-screen annotation and collaboration with another site, as well as transmitting the session to a remote site in real-time. Refer the REAR PROJECTION SMART Board™ 3000i INSTALLATION GUIDE for more detailed description of features.

#### **Touch Panel Control\***

An optional 12" or 15" touch panel can be incorporated enabling a user to manage the presentation from a podium or desktop. In some cases, this touch panel can be used as the only control source or in conjunction with the controls on the interactive SMART Board™. See APPENDIX 7: 12" TOUCH PANEL INTERFACE.

### Audio and Video Sources

#### **Main Camera and AUX Camera\*\***

The Director is capable of handling two controllable s-video sources. A TANDBERG W.A.V.E II Camera, included with your system, or other VISCA controllable camera can be configured for use.

At present, if you intend to connect two cameras, they must be identical - you cannot have one WAVE II camera and one Sony camera. They must both be WAVE II cameras or both be a VISCA controllable camera of the same make and model.

#### **AudioScience Microphone\*\***

The AudioScience Microphone is an overhead, transparent microphone that eliminates the need for multiple tabletop microphones. Mounted on the ceiling, the microphone effectively picks up participants within a wide range with very little distortion. Using the Automatic Gain Control (AGC) on the codec maintains the audio signal level at a fixed value by attenuating strong signals and amplifying weak signals.

\* - OPTIONAL FEATURE.

\*\* - OPTIONAL EQUIPMENT AVAILABLE THROUGH TANDBERG OR IS USER SUPPLIED.

**Document Camera\*\***

A composite video source is available for a document camera. Document cameras can be used to show a wide variety of media, such as whitepapers, film negatives, or standard overhead projector transparencies. Source selection, zoom, focus and lighting can all be controlled from the button panel of the document camera.

**VCR/DVD player\*\***

Standard composite video VCR's or DVD players can be added for playback and recording. Using codec features such as audio "ducking" (lowering the VCR output while the presenter is talking) allows seamless presentations and participant interaction. Use the front panel controls or the supplied remote control specific to these devices.

**Auxiliary Sources\*\***

Any auxiliary source can be substituted for the sources above.

There are a total of 2 s-video and 2 composite inputs available on the system.

**Optional Equipment\*\*****Additional Monitors**

An additional monitor can be added for viewing the far or local video. Typically used to view the far side in a teaching environment, the monitor will also show the local image when giving a local presentation.

**PC and Laptop Computer**

A user supplied PC and/or laptop can be connected to the system to enhance presentation.

You may choose to connect a PC placed inside the 3000i cabinet and use it as a source for presentation. If you intend to use a PC as a presentation source only, then the PC must be, at minimum, able to support VGA.

You may choose to connect a laptop computer to the 3000i as a source for presentation. This can be done in conjunction with, or independently from, the PC that is integrated to the Director system.

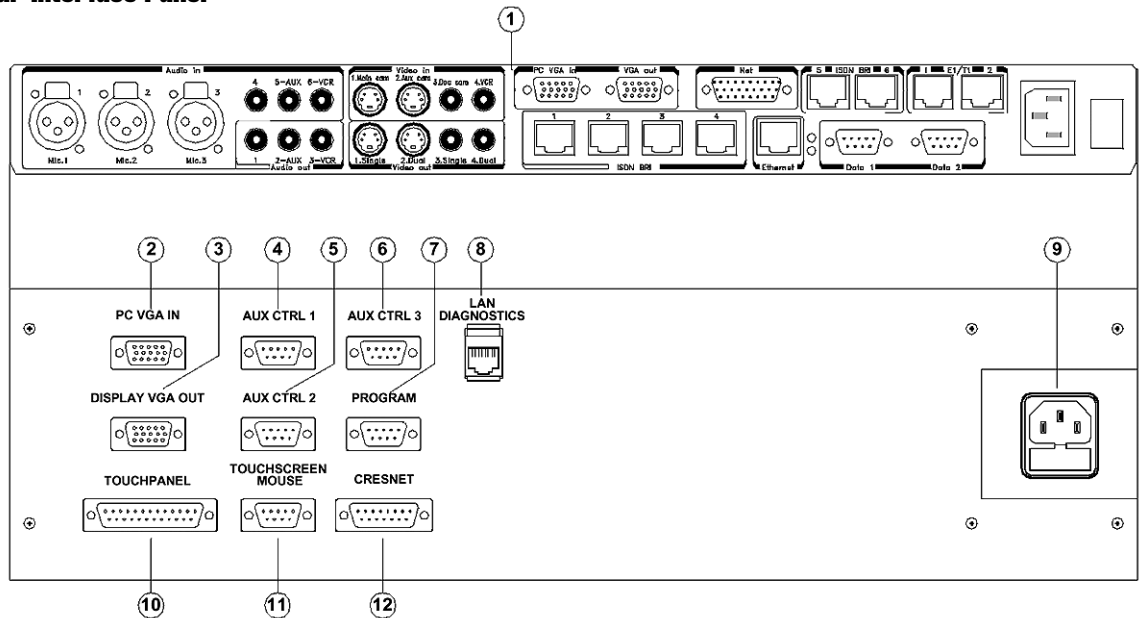
Refer to the REAR PROJECTION SMART BOARD™ 3000I INSTALLATION GUIDE for information on connecting the PC and laptop as well as SMART software installation and configuration.

\*\* - OPTIONAL EQUIPMENT AVAILABLE THROUGH TANDBERG OR IS USER SUPPLIED.

## System Connections

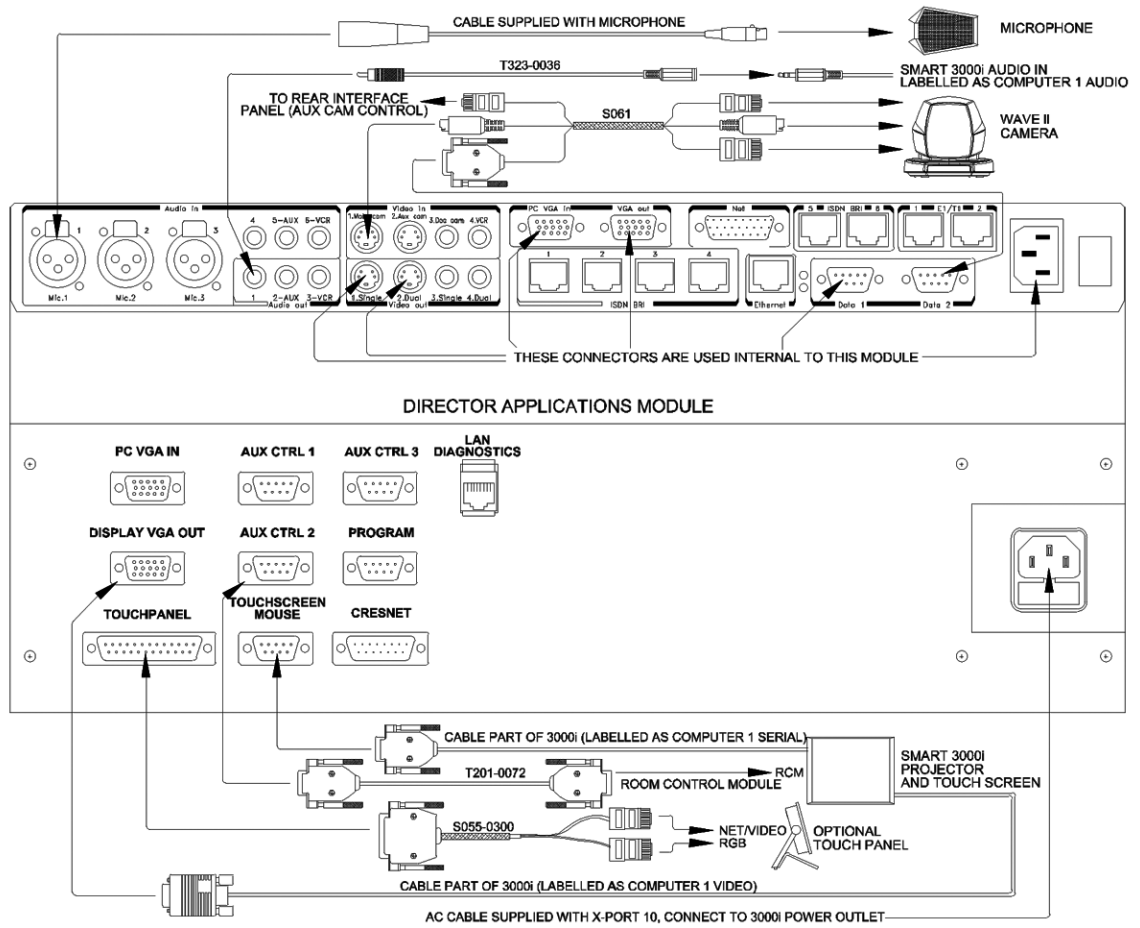
The following diagrams provides an overview of the connections that are required for the Director system. Before handling the system's cables and components, make sure that the main power plug is unplugged from any power source. For simplicity the Network connections are not shown in the diagram below. See GETTING STARTED > CODEC BASICS > **NETWORK AND LAN SETTINGS** for connecting network cables to the Director.

### Rear Interface Panel

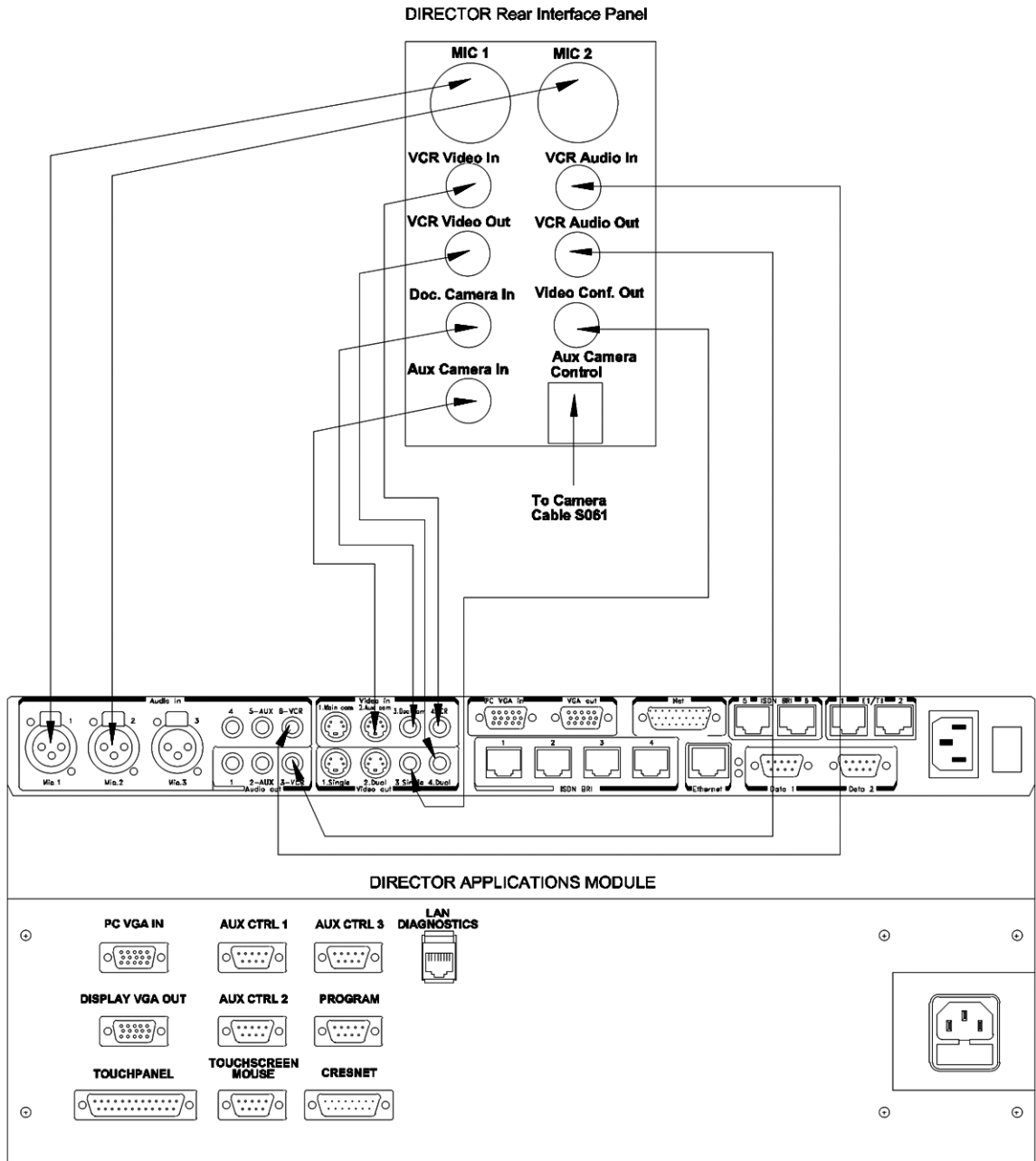


1. TANDBERG 6000 Codec.
2. **PC VGA IN:** Personal Computer Video Input, supports VGA, SVGA, and XGA resolution (15 pin female HD D-sub connector). See TANDBERG 6000 USER'S MANUAL for more information regarding codec I/O.
3. **DISPLAY VGA OUT:** System Display VGA out, XGA resolution (15 pin female HD D-sub connector).
4. **AUX CTRL 1:** Bi-directional RS232 (9600,N, 8,1) (9 pin female D-sub connector).
5. **AUX CTRL 2:** Bi-directional RS232 (9600,N, 8,1) supports SMART Board™ 3000i Room Control Module (9 pin female D-sub connector).
6. **AUX CTRL 3:** Bi-directional RS232 (9600,N, 8,1) used for PC com port with SMART Board™ Software Package (9 pin female D-sub connector).
7. **PROGRAM:** Bi-directional RS232 (115200,N, 8,1) used for diagnostics and loading software to Director Module. (9 pin female D-sub connector).
8. **LAN DIAGNOSTICS:** Ethernet port used for upgrading and troubleshooting the control system (RJ45 connector).
9. **AC Input:** Fused 120VAC (or 220VAC for Europe) Input.
10. **TOUCHPANEL:** Supports Optional Touch sensitive panel (25pin female D-sub connector).
11. **TOUCHSCREEN/MOUSE:** Supports SMART Board™ 3000i touch overlay or Microsoft compatible mouse (9 pin female D-sub connector).
12. **CRESNET:** Port reserved for future expansion of Cresnet devices (15 pin male D-sub connector).

### Rear Interface Panel Connections



### Rear Interface Panel - A/V Plate



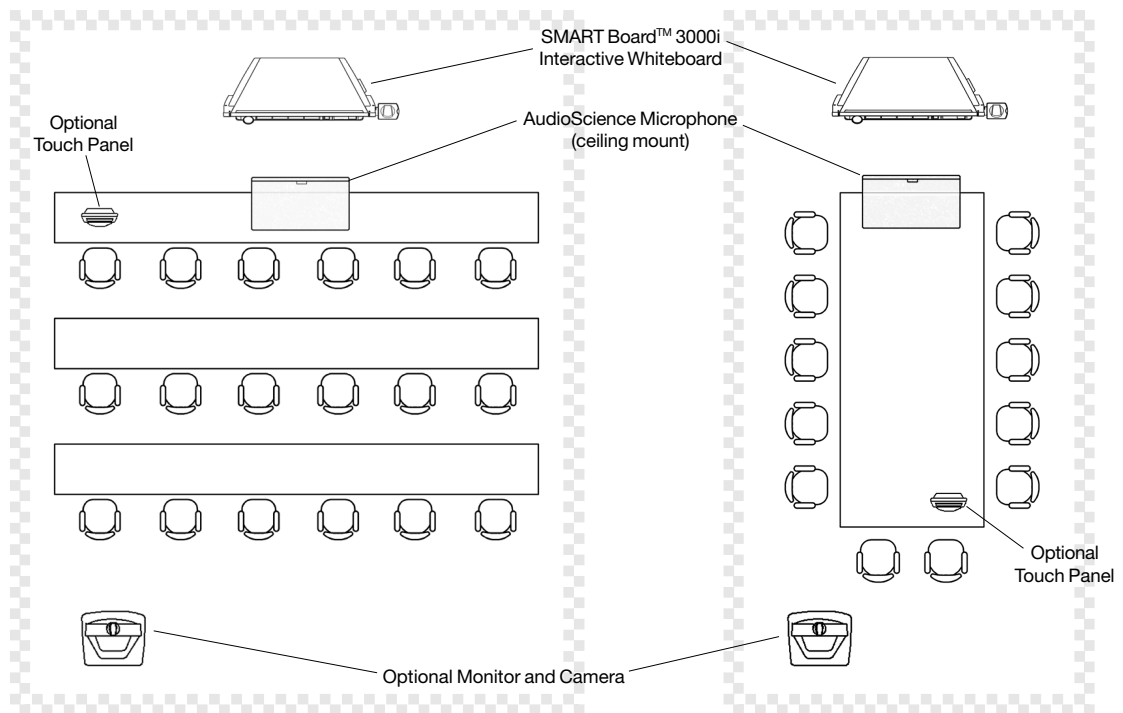
# Installation & Setup

## Room Configuration

The TANDBERG Director system has been designed to provide versatility for installation at any site, whether for corporate, military or educational applications.



REVIEW THE **WARNINGS AND SAFETY PRECAUTIONS** ON PP 4-5 BEFORE INSTALLATION AND SETUP.

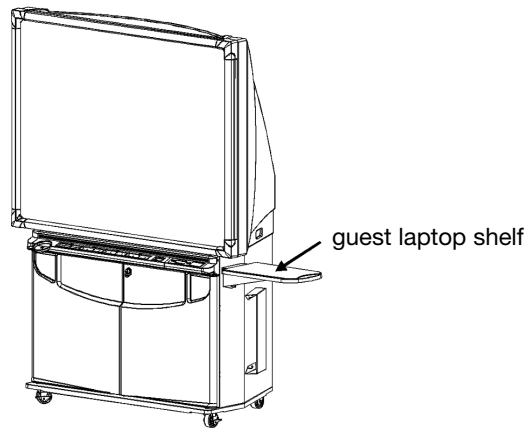


See APPENDIX 4: ENVIRONMENTAL AND OPERATION CONSIDERATIONS for more information.

**NOTE**

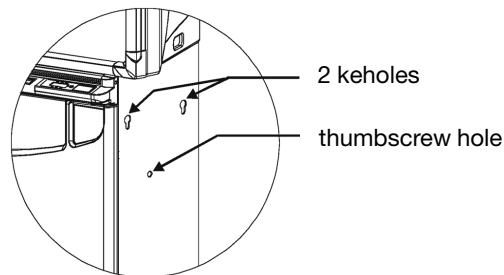
BE SURE TO LEAVE SUFFICIENT SPACE AROUND THE ENTIRE CABINET SO YOU CAN COMFORTABLY ACCESS IT DURING AND AFTER INSTALLATION.

## Installing the Guest Laptop Shelf

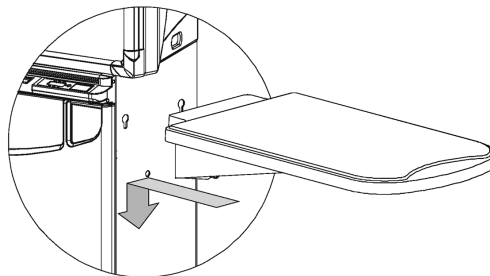


**TIP** YOU CAN INSTALL THE SHELF ON EITHER SIDE OF THE CABINET. IF YOU'RE INSTALLING THE SHELF ON THE COMPUTER SIDE OF THE CABINET, INSTALL THE SHELF BEFORE THE COMPUTER. THE PLASTIC HOLE COVERS ARE MUCH EASIER TO REMOVE WHEN THE COMPUTER IS NOT INSIDE.

1. Locate the two laptop shelf keyholes and the single thumbscrew hole on the upper right (or left) side of the cabinet. Remove the plastic hole covers.



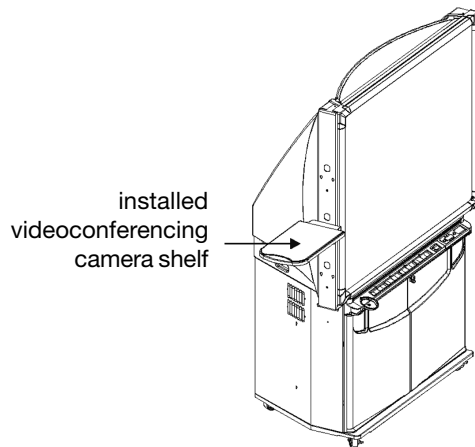
2. Push the two protruding bolts on the edge of the shelf into the two keyholes, and then push the shelf firmly down.



3. Push the captive thumbscrew at the bottom of the shelf into the thumbscrew hole and tighten.



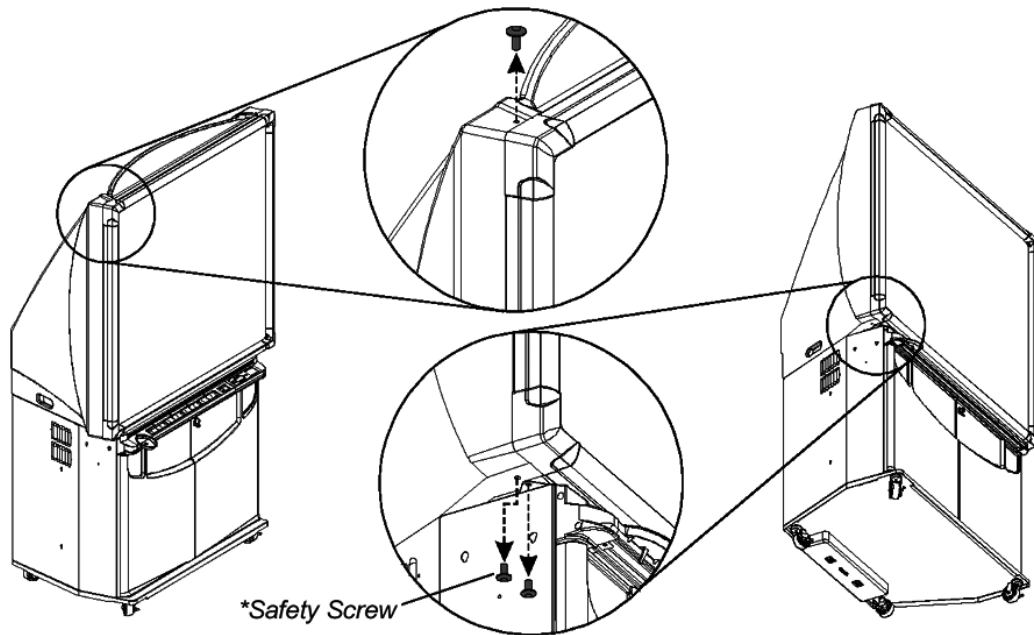
## Installing the Adjustable Camera Shelf



**TIP** YOU CAN INSTALL THE 3000I VIDEOCONFERENCING SHELF ON EITHER SIDE OF THE CABINET. THE MOUNTING ARM OF THE SHELF PROVIDES A CONVENIENT HIDDEN CHANNEL FOR THE CAMERA CABLING.

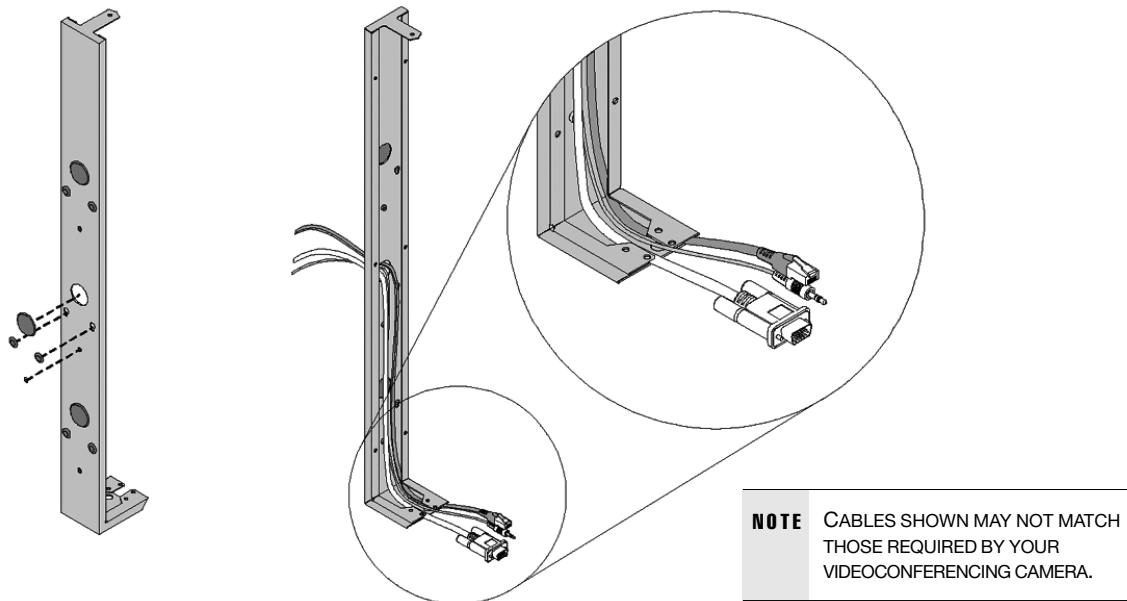
### To install the videoconferencing shelf

1. Choose the side on which you want to mount the shelf. Using the supplied hex-head screwdriver, remove the three 1/4-20 x 3/8" fasteners as shown. Note that one safety screw will be removed.

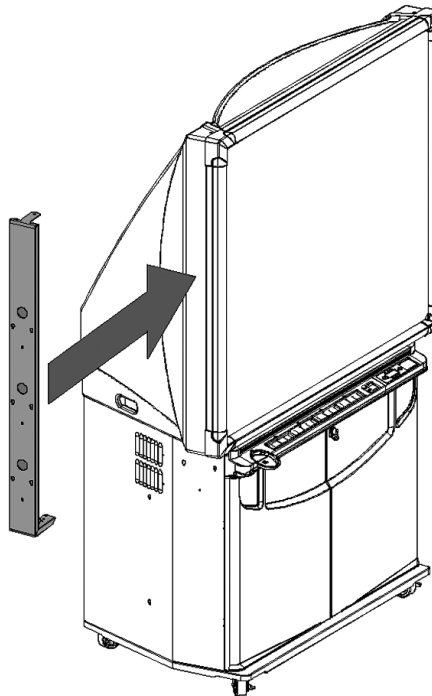


**WARNING:** DO NOT MOVE THE CABINET UNTIL THE SAFETY SCREW IS REPLACED IN STEP 4.

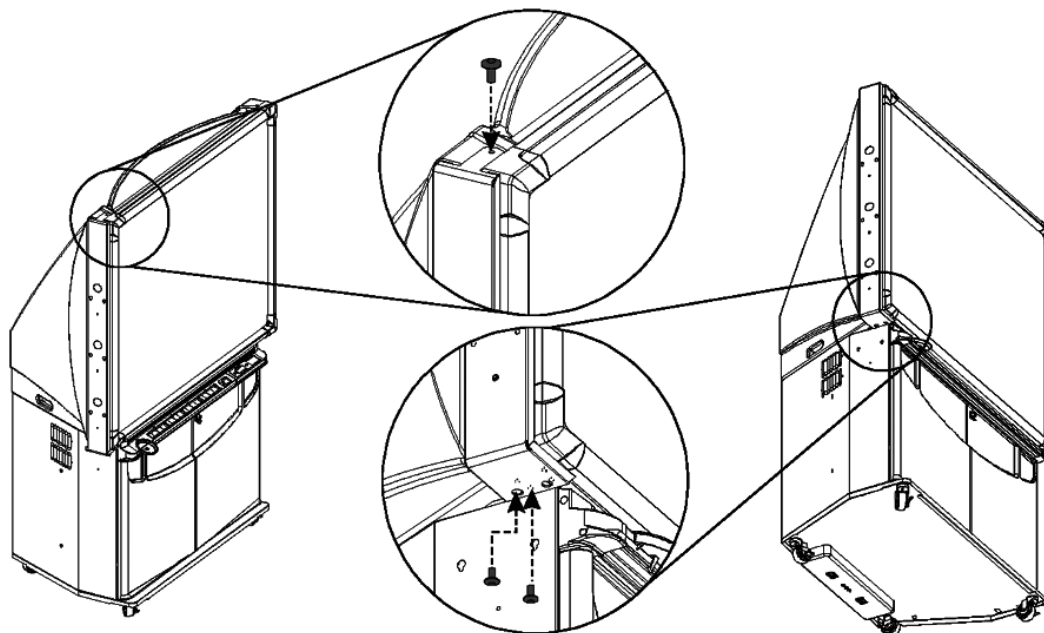
2. Remove the four caps and plugs from the mounting arm at the location where you want to mount the shelf. Feed the cables for the videoconferencing camera through the large hole, down the channel and through the lower mounting point.



3. If you're installing the mounting arm on the same side as the IR receiver, detach the receiver and leave it temporarily dangling. Carefully slide the mounting arm onto the side of the cabinet, ensuring that the cables remain in the channel and are not pinched.

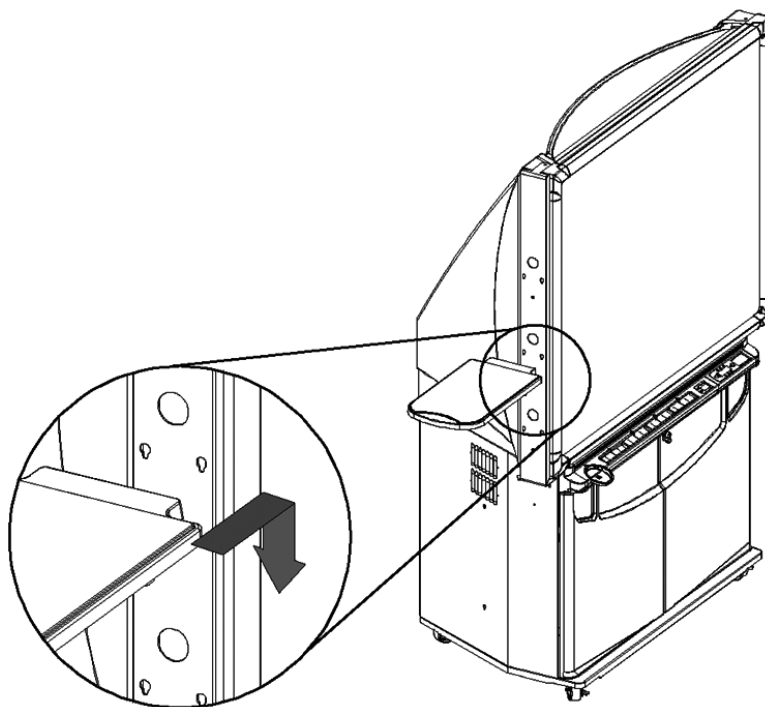


4. Use the three supplied 1/4-20 x 1/2" fasteners in place of the 1/4-20 x 3/8" fasteners (removed in step 1) to secure the mounting arm to the cabinet. The safety screw is now replaced.

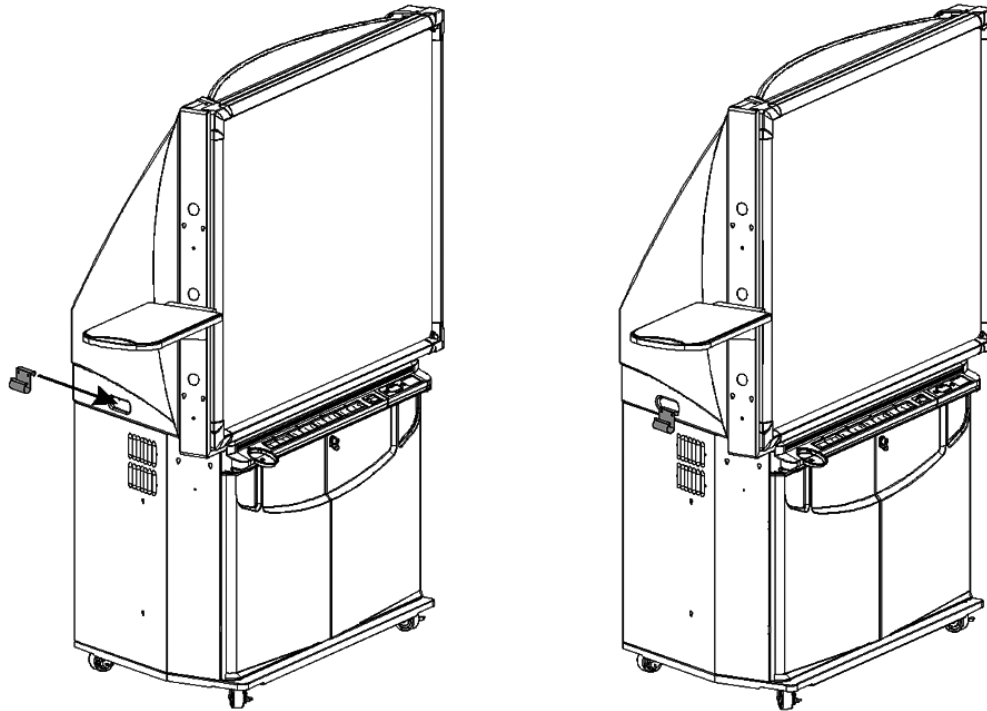


**NOTE** NOW THAT YOU'VE REPLACED THE SAFETY SCREW, YOU CAN SAFELY MOVE THE CABINET.

5. Hook the shelf to the keyholes in the mounting arm, tightening the thumbscrew to secure the shelf.



6. Cable management along the side of the cabinet is provided by the J-hook. Clip the J-hook onto the handle on the side of the 3000i and route the cables through that hook to the Connection Panel at the rear of the cabinet.



7. If you detached the IR receiver in step 3, use the Velcro included in the accessory kit to reattach it to the bottom of the mounting arm.
8. To connect the camera to the system, find the cable loom (cable #S061) that has three corresponding connectors for the camera (the cable should be coiled and secured with a Velcro strap on the inside of the Director system):
  - CAMERA S-VID OUT
  - CAMERA CTRL OUT
  - CAMERA CTRL IN

Run the cable loom up the inside of the 3000i cabinet, on whichever side you have installed the shelf, and deposit it through the appropriate hole to connect to the camera.

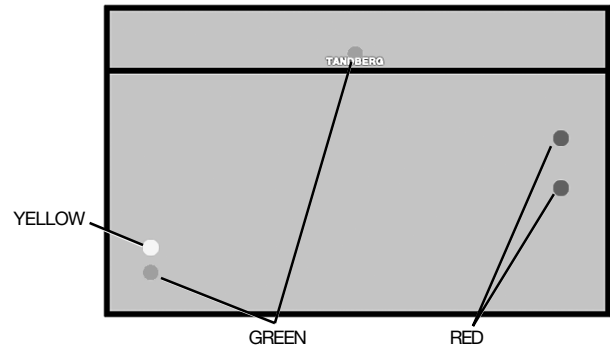
Installation is complete. Follow the instructions in reverse order to uninstall.

## Powering on the System

Once the system is installed in the appropriate location, it is now ready for the AC mains to be plugged in. To verify that all components have been powered on, you should be able to see the following LED indicators through the smoked glass cover of the Director Application Module.

If any of the green or red LED's do not show through the smoked glass, the system will not work properly. Contact TANDBERG Technical Service immediately.

To power on the projector, press the green **PROJECTOR STANDBY** button on the front of the 3000i cabinet. Once powered, refer to '**SYSTEM SETUP**' for screen calibration.



**NOTE** IT IS RECOMMENDED THAT YOU PRESS THE GREEN **PROJECTOR STANDBY** BUTTON TO PLACE THE SYSTEM IN **STANDBY** WHENEVER IT IS NOT IN USE. THIS WILL MAXIMIZE THE LIFE OF LAMP INSIDE THE PROJECTOR.

## System Setup

### SMART Board™ Projector Setup and Calibration

When you press the **POWER BUTTON** on the 3000i front control panel unit to activate the projector display, it will then require approximately 40 seconds to complete the start-up routine, at which point the TANDBERG **start-up screen** will be displayed.

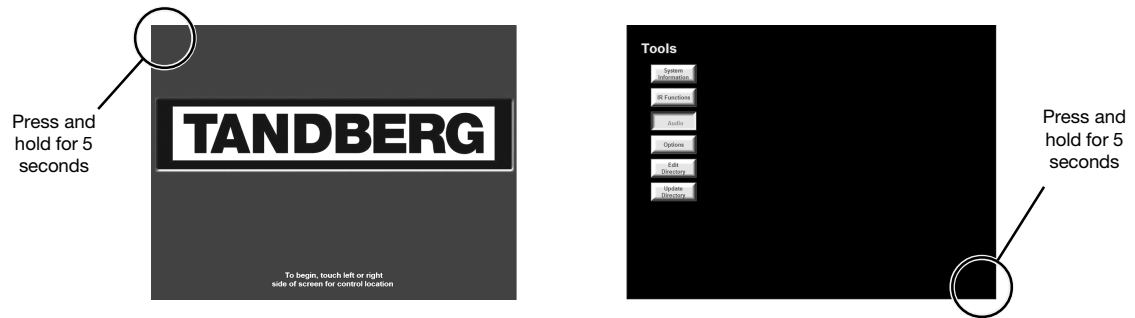
For SMART Board™ software installation and configuration, or any additional information, please reference the '**REAR PROJECTION SMART BOARD™ 3000i INSTALLATION GUIDE**'.



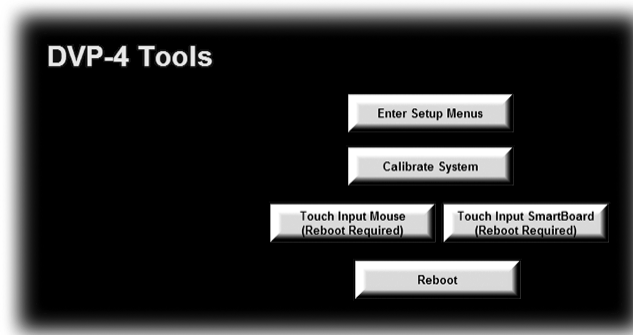
## Touchscreen Calibration

Once the system is installed and functioning, it is recommended that the SMART Board™ 3000i touch screen be calibrated.

First touch and hold the top left corner of the screen for 5 seconds. This will give you a hidden 'Tools' setup screen. Then touch and hold the bottom right corner of the 'Tools' screen for another 5 seconds.



You will get the following 'DVP-4 Tools' setup screen:



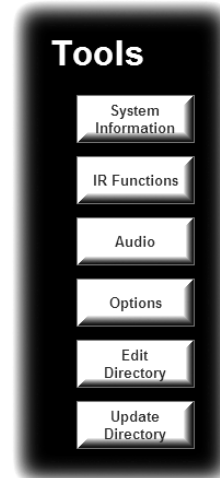
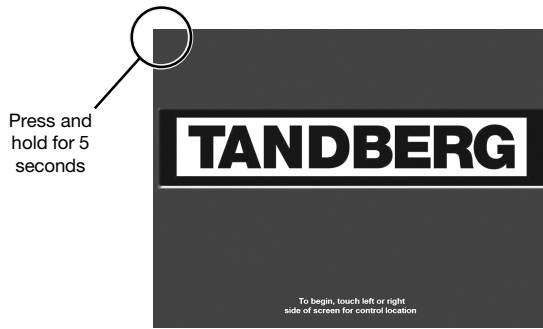
Selecting '**Calibrate System**' will display a series of push-points on the touch-screen device used to calibrate the screens. Carefully touch the calibration points, and after the third point, the system will **restart** and return to the opening start-up page.

In rare cases, it may not be possible to reach this page because the calibration is too far off the screen. You can connect direct to the Director Application Module and enter a simple command:

- Connect your PC with a "straight through" RS232 cable to **PROGRAM** on the rear interface panel of the Director Applications Module.
- Open a terminal program such as 'HyperTerminal' or 'PROCOMM Plus'.
- Set the baud rate settings to 115200,N, 8,1.
- Type the command CALTOUCH and <enter>.
- Touch the crosshairs on the screen to calibrate the system.

## Touch Panel Tools for System Configuration

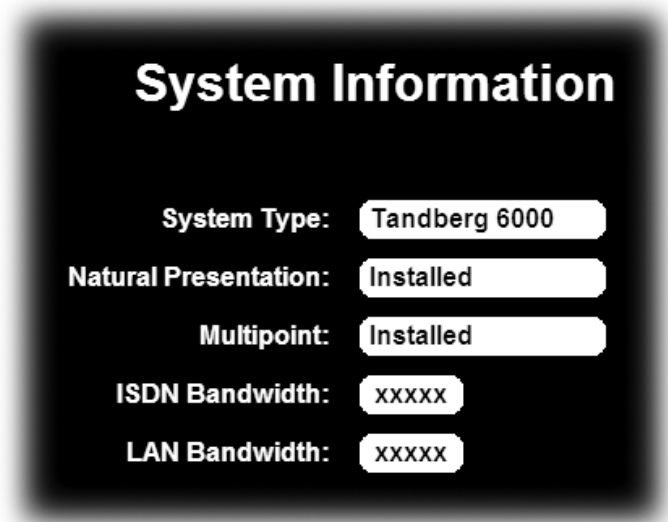
Various tools may be accessed from the systems opening page. Touching the top left corner of the touch screen and holding for 5 seconds will access a list of tools where system information, IR functions, audio, system options, and directory information can be accessed and edited.



### System Information

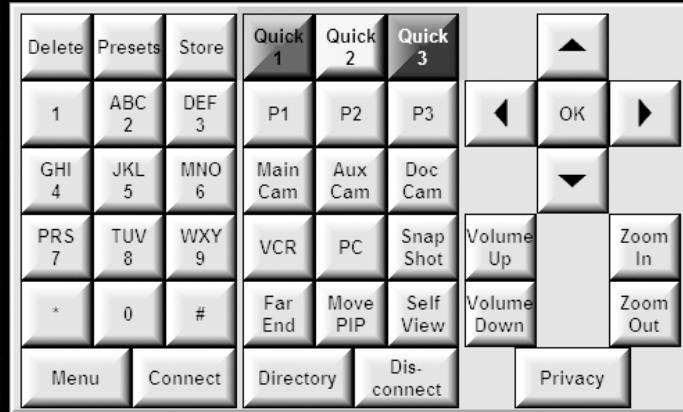
This button gives information about options and bandwidths available on the codec. The Director system should already be equipped with Security, Natural Presenter Package<sup>TF</sup>, and MultiSite<sup>TF</sup> options.

These options can be set on the codec using the IR controls (see **TOUCHSCREEN AND REMOTE IR CONTROLS** and **ADVANCED USE > SOFTWARE OPTIONS**).



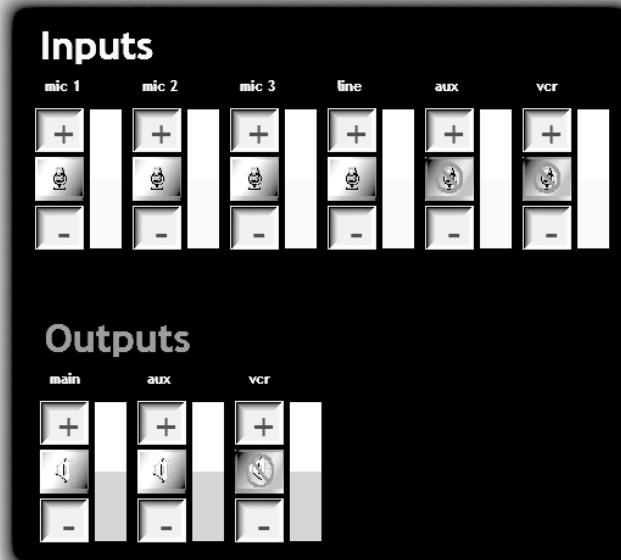
**IR Functions**

Selecting the **IR FUNCTIONS** button will display both near- and far end video outputs as well as all the IR control buttons that correspond to the TANDBERG remote control. You can use any of these buttons to emulate button pushes on the remote. See GETTING STARTED > **TOUCHSCREEN AND REMOTE IR CONTROLS**.



**Audio**

Choosing the **AUDIO** button will display the audio inputs and outputs of the codec. Touching the + or - for each input will raise or lower the gain of each input. Inputs may also be disabled/enabled by touching the icon in the middle of each respective input.

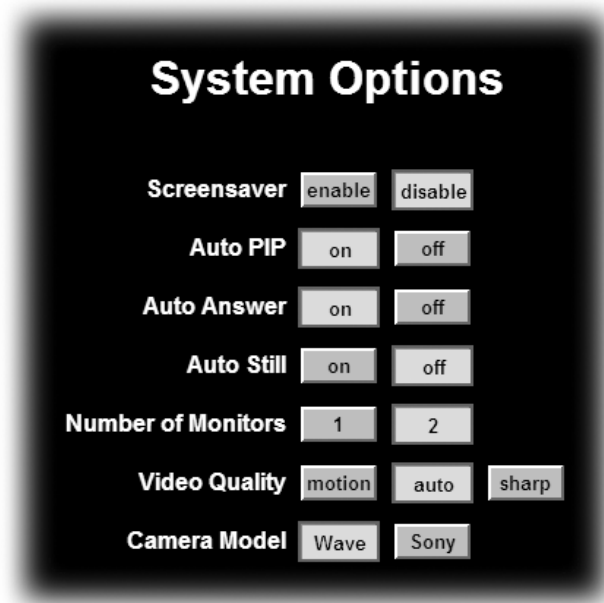


**NOTE** WHEN IN THE NORMAL PRESENTATION AND VIDEOCONFERENCE PAGES AND THE VCR SOURCE IS SELECTED, THE SYSTEM WILL AUTOMATICALLY TURN ON AND OFF AUDIO INPUT 6 CORRESPONDING TO THAT VIDEO INPUT.



## System Options

The **SYSTEM OPTIONS** button allows for limited modification of setup of the codec. Modification of these setting from the default values may affect the operation of the Director system. The main item of note is the '**Camera Model**' setting. The system supports VISCA controlled cameras and therefore is selectable between the W.A.V.E II and VISCA controlled cameras. VISCA cameras would use the Aux 1 Output on the Director Rear Interface Panel.



**NOTE** IF CONNECTING TWO CAMERAS, THEY MUST BE IDENTICAL - YOU CANNOT HAVE ONE WAVE II CAMERA AND ONE SONY CAMERA. THEY MUST BOTH BE WAVE II CAMERAS OR BOTH BE A VISCA CONTROLLABLE CAMERA OF THE SAME MAKE AND MODEL.

## Edit Directory

Allows the user to enter and edit directory entries for the Director system. First, update the directory by following the instructions below. Then select the 'Add New Entry' button to add a new directory entry, or select an existing directory entry to edit that information. Refer to 'VIDEOCONFERENCE OPERATION' > '**EDITING SPEED DIAL DIRECTORY**' for more information.

## Update Directory

Click **UPDATE DIRECTORY** to set the initial directory placeholders that will be negotiated between the codec and control device for the Director system. Any time the codec directory is updated with new or modified entries through any other method than using the **EDIT DIRECTORY** method discussed above (i.e. Codec Data port, Web browser, Telnet, or TMS), the control device should be "synchronized" with the updates made in the codec by clicking **UPDATE DIRECTORY** on the **TOOLS** screen to have the latest modifications displayed.

## Network Connections

The network connections are located on the rear interface panel of the TANDBERG 6000 Codec.

The network cables should be connected as applicable to the site. Refer to 'ADVANCED USE' > 'TERMINAL SETTINGS' for more information concerning IP settings and other network equipment that may be required, such as network terminating units and CSUs.

<b>NOTE</b>	BE SURE TO WRITE DOWN THE NUMBERS ASSOCIATED WITH EACH OF THE ISDN LINES. YOU WILL NEED THEM LATER TO CONFIGURE THE SYSTEM.
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### ISDN BRI

Connect each ISDN cable to the ISDN BRI sockets found on the codec. Then connect the other end of the loom to the appropriate wall sockets. If however, the wall sockets provide an ISDN U-interface, the ISDN lines from the codec must first be connected to the S/T interface of network terminating units NT1 and NT384. Then connect the U interface of the network terminating units to the wall sockets.

### ISDN PRI/T1

Connect the PRI/T1 cable to the PRI/T1 socket labeled "1" on the codec. Connect the other end of the cable to a Channel Service Unit (CSU). Then connect the CSU to the site's PRI/T1 line.

### Other Networks - Using the External Network Interface

If you are using other networks, please refer to 'EXTERNAL NETWORK SETTINGS' and 'APPENDIX 2'.

### LAN

Connect the LAN cable from the LAN connector on the rear of the codec to the site's LAN network connection.

It is recommended that both the codec and control system be provided with a LAN connection. The system will function without a LAN connection if you are placing ISDN calls only, but a LAN connection is recommended for both software upgrades and remote diagnostics. The control system LAN information must be set locally. For information regarding the network settings on the codec, refer to 'ADVANCED USE' > 'TERMINAL SETTINGS'.

<b>NOTE</b>	THE LAN CONNECTION ENABLES YOU TO PLACE IP CALLS ONLY, SOFTWARE UPGRADES AND REMOTE DIAGNOSTICS. ISDN CALLS MUST HAVE ISDN CONNECTIONS CONFIGURED.
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## Device Connections

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### Microphone

Connect the microphone cable to the XLR input of the 6000 codec. The default codec setting has all microphone inputs enabled and the gain set to +3dB. Adjustments to the audio settings may be done in 'TOUCHSCREEN TOOLS' or with the 'IR CONTROLS' (discussed later in this document).

### Touch Panel

A 12" or 15" color video touch panel options are available for the Director system. Cables necessary for connecting them to the system are included with the touch panel. See 'BASIC SYSTEM CONNECTIONS' for details on connecting a touch panel. See APPENDIX 7: 12" TOUCH PANEL INTERFACE.

### Main Camera

The main camera source selection corresponds to the first s-video input (labeled "1") on the codec. This camera input used specifically with the controllable TANDBERG W.A.V.E II camera.

### AUX Camera

The auxiliary camera source selection corresponds to the second s-video input (labeled "2") on the codec. This camera input can be a fixed room camera or can be a second controllable TANDBERG W.A.V.E II camera. To control a second camera, control signaling must be "daisy-chained" from the first camera. Additionally, the camera must be powered locally and the video must be run separately back to the codec. Installation instructions for installing this are included with an extra camera when purchased.

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<b>NOTE</b>	IF CONNECTING TWO CAMERAS, THEY MUST BE IDENTICAL - YOU CANNOT HAVE ONE WAVE II CAMERA AND ONE SONY CAMERA. THEY MUST BOTH BE WAVE II CAMERAS OR BOTH BE A VISCA CONTROLLABLE CAMERA OF THE SAME MAKE AND MODEL.
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## PC and Laptop Computer Setup

A user supplied PC and laptop can be connected to the system to enhance your videoconferencing presentation. Refer the REAR PROJECTION SMART Board™ 3000i INSTALLATION GUIDE for details on installation and configuration for a PC and laptop.

### PC

A PC can be placed inside the 3000i cabinet and used as a source for presentation. If you intend to use a PC as a videoconferencing presentation source only, then the PC must be, at minimum, able to support VGA.

If you intend to utilize SMART Tools with the PC, refer to the SMART Tools documentation for minimum PC requirements.

Slide the computer into place above the computer straps, and then use them to secure it. Then locate the tie-wrapped bundle of labeled cables dangling inside the cabinet. In addition to this cable bundle, AC power, keyboard and mouse cables are located nearby. Make the appropriate connections to the PC.

**NOTE** THE STRAPS ALLOW YOU TO ROLL THE CABINET FROM ROOM TO ROOM WITHOUT REMOVING THE COMPUTER. HOWEVER, THESE STRAPS WILL NOT SECURE THE COMPUTER IN PLACE DURING CABINET SHIPMENT. IF YOU SHIP THE CABINET, REMOVE THE COMPUTER FIRST.

### Laptop

You may choose to connect a laptop computer to the 3000i as a source for presentation. This can be done in conjunction with or independently from the PC that is integrated to the Director system.

Simply connect it to the 'Laptop Umbilical'. Extend the laptop end of the umbilical from the rear of the 3000i cabinet until it reaches the laptop shelf. Then make the appropriate connections to the laptop. If you want network access, you'll also need to connect the adapter end of the umbilical's network cable to a room network connection.


**NOTE** BECAUSE THE SYSTEM IS VIDEO SENSING, YOUR LAPTOP MUST SEND A VIDEO SIGNAL IN ORDER TO DISPLAY THE LAPTOP IMAGE ONTO THE 3000i.

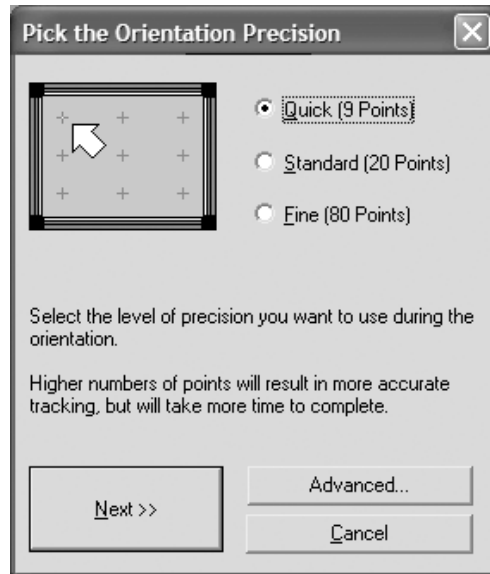
REFER TO THE LAPTOP USER MANUAL FOR SWITCHING VIDEO. MOST LAPTOPS USE 'FN+F5' TO SWITCH.

### PC Calibration

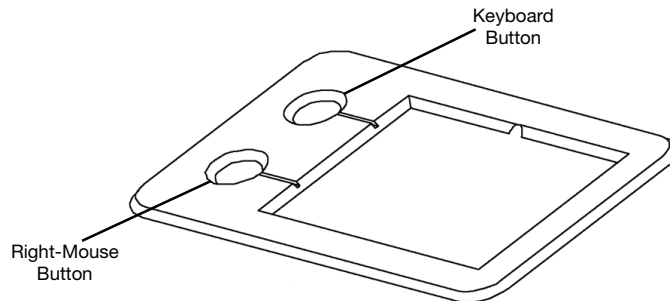
It may also be necessary to calibrate the SMART Board™ Software on your computer with the 3000i.

To calibrate the SMART Board Software, select the PC as your video source and use the **'Orient'** utility found in the SMART Board™ Software's **Control Panel**.

 THE TOUCH SCREEN SHOULD BE CALIBRATED BEFORE CALIBRATING THE SMART BOARD™ SOFTWARE.



You can also calibrate the PC software by holding down the **KEYBOARD** and **RIGHT MOUSE** buttons at the same time, found on the front of the 3000i.



# Getting Started

## System startup

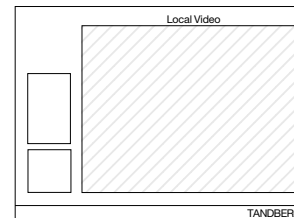
If the TANDBERG Director System is not already powered on, press the **POWER BUTTON** on the SMART Board™ 3000i front control panel unit to activate the projector display. It will then require approximately 40 seconds to complete the startup routine, at which point the TANDBERG startup screen will be displayed.



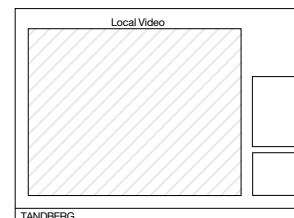
## Control Orientation

Touch either the LEFT or RIGHT hand side of the start screen depending on your control preference. When using a mouse to control the system right-click on the preferred side.

Selecting the left hand side will display the source selection and device control on that left side of the screen. The taskbar controls will be configured from the left side.



Selecting the right hand side will display the source selection and device control on that right side of the screen. The taskbar controls will be configured from the right side.



The control preference feature has been incorporated primarily for when the Director Applications Module has been integrated within the SMART Board™ hardware. This allows the user to manipulate the controls without standing in front of the main display or camera.

# Touch Screen and Remote IR Controls

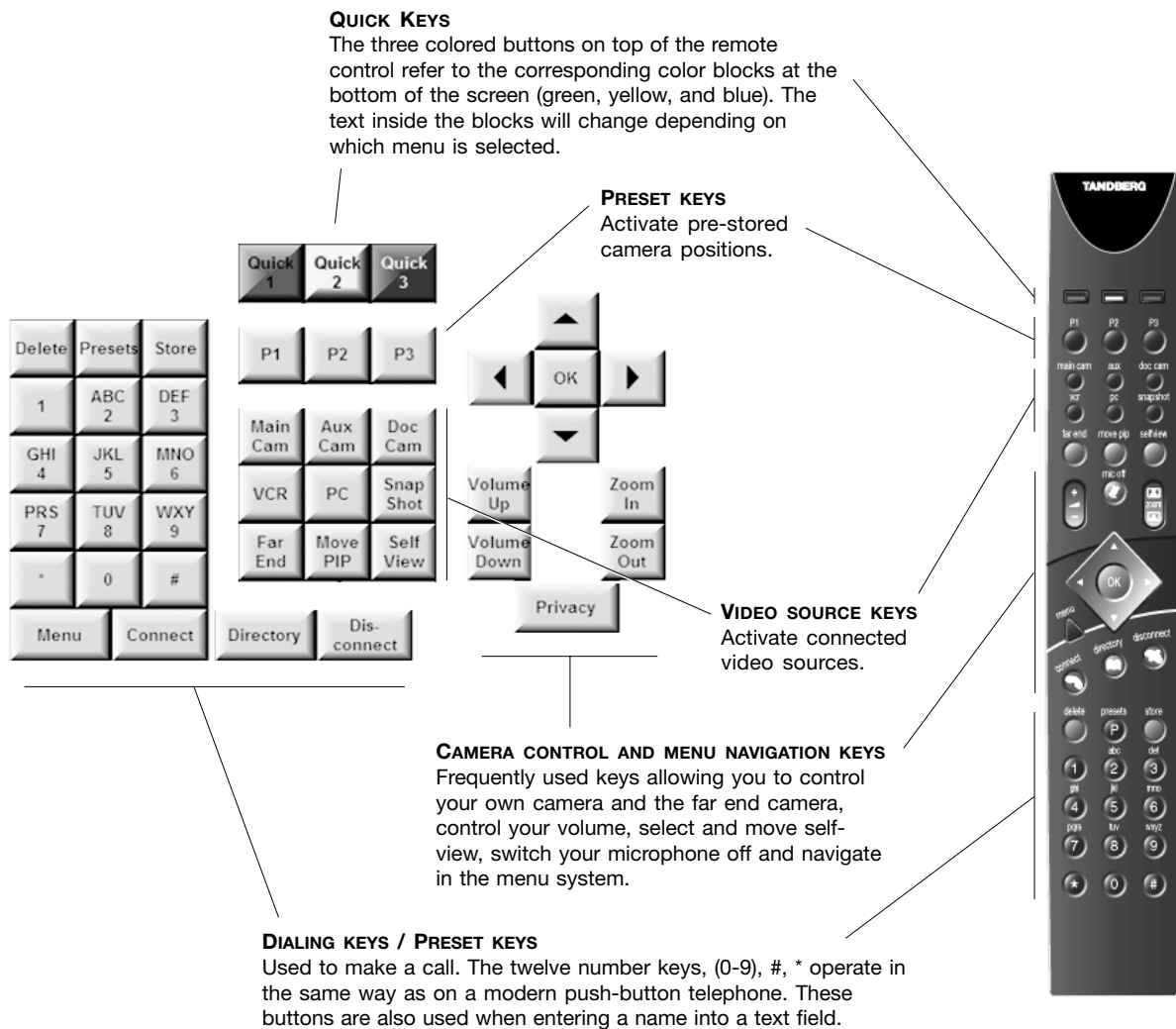
The Director is designed to utilize the SMART Board™ 3000i interactive whiteboard touch screen. Every command and operation can be executed through the 3000i touch screen interface.

The TANDBERG remote control may also be used to control the Director. While the Director system can execute most commands from the TANDBERG infrared remote control, it is recommended that you use the controls presented on the display or optional touch panel as the primary source for control. The examples in this documentation will present the touch screen operation.

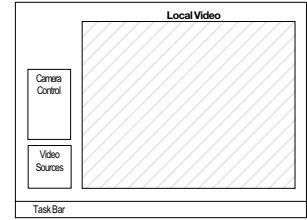
**NOTE** DUE TO THE ENHANCED FEATURES OF THE TOUCH SCREEN INTERFACE USING THE TANDBERG REMOTE CONTROL MAY PREVENT YOU FROM FULLY UTILIZING THE DIRECTOR SYSTEM'S CAPABILITIES.

## IR Functions

The system's most commonly used functions can be accessed directly from either the touch screen or remote IR control with single key presses. The IR controls are particularly useful for codec configuration.



The initial screen will show a large view of the local display with controls on either side, depending on your control orientation preference.



To use the on-screen IR controls:

Press the **VIDEOCONFERENCE** button on the **TASKBAR**. This will take you to the **'Call Control'** Screen.

From the **'Call Control'** screen, and only from the **'Call Control'** screen, touch the **TANDBERG LOGO** on the **TASKBAR**.

The **'IR Controls'** will appear in the place of the **'Address Book'**.

Pressing the **TANDBERG LOGO** again will toggle between the **'Address Book'** and **'IR Controls'**.

Using the **IR Controls** you can navigate the codec's menu structure to configure the codec.

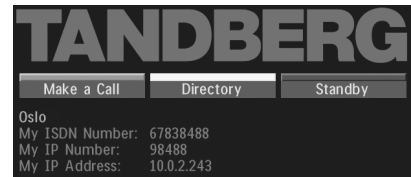


**NOTE** REMEMBER TO **EXIT** ANY MENUS BEFORE LEAVING THE **'IR CONTROL PAGE'**. FOR MORE INFORMATION ON THE TANDBERG REMOTE CONTROL CONSULT THE **'TANDBERG 6000 USER'S GUIDE'**.



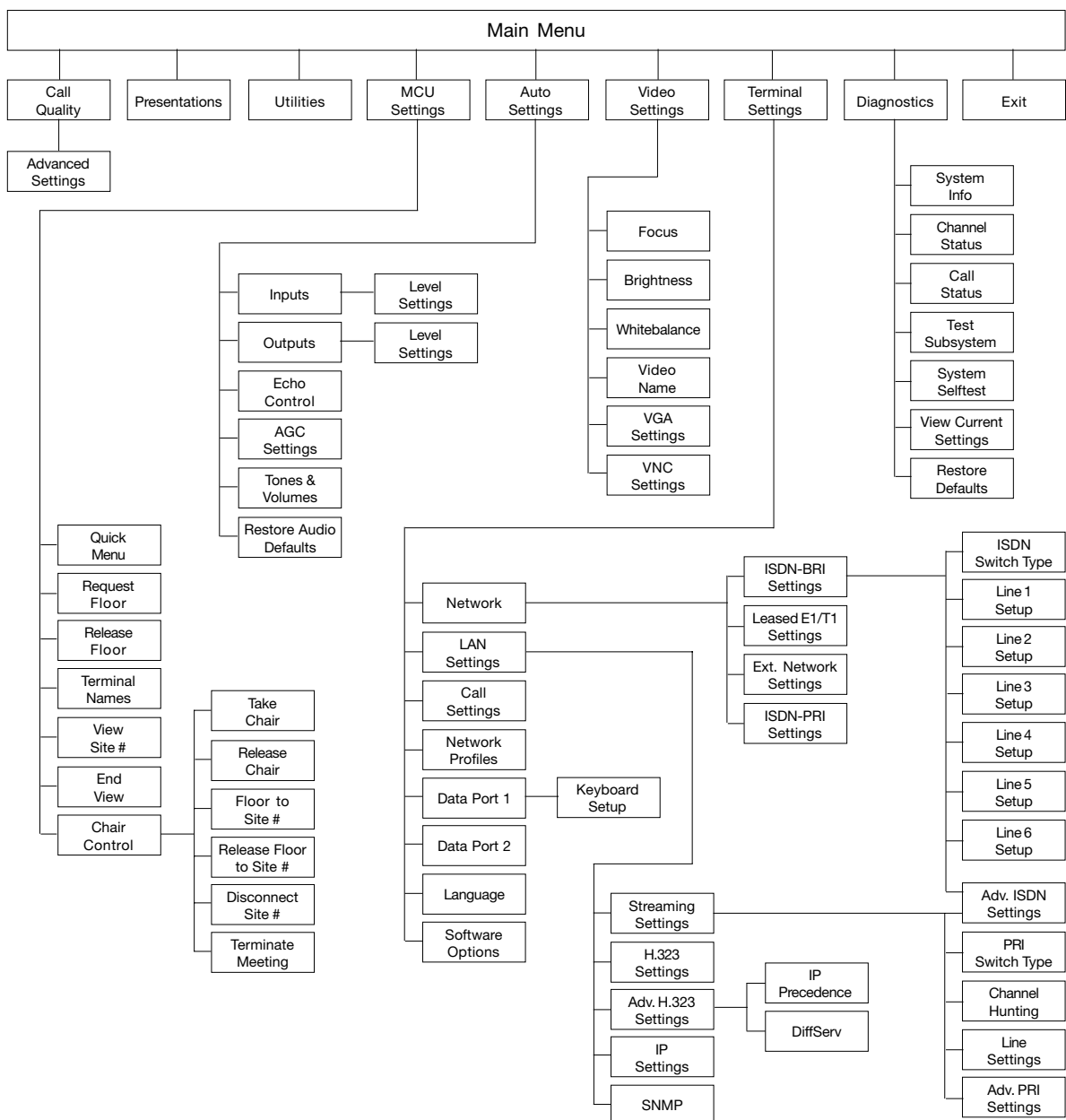
# Codec Basics

The TANDBERG 'Welcome Screen' screen will appear in the 'Remote View' panel. This screen should provide you with the most important system information. The three color-coded commands shown correspond with the **QUICK KEYS** on the IR control. This means that to make a call, you can press the green **QUICK KEY** on the IR control. Before you proceed you must configure the TANDBERG codec in order to place videoconference calls.



## Menu structure

The codec's on-screen menu structure is shown below. Press the **MENU** key on the IR control to enter/leave the 'Main Menu'.



## General Codec Configuration

The control system communicates with the codec through Data 1 at 9600 baud, No parity bit, 8 data bits, and 1 stop bit. The codec should be left in its default configuration with the following exceptions. Using the IR control, the following settings should be addressed:

**NOTE** THESE SETTINGS ARE ESSENTIAL FOR OPTIMAL SYSTEM SETUP.

- Enabled but unused ISDN lines (lines not active) should be disabled.
- Select the **QUICK KEY 'System Info'** (IR control) to view line status.
- To disable unused ISDN lines, press **MENU** on the remote control.
- Select the menu 'Terminal Settings' > 'Network' > '**ISDN-BRI settings**'.
- Select the relevant 'Line Setup' menu and set '**Enabled: Off**'.
  
- Enter **System Name** to identify the system during an MCU conference.
- Select 'Utilities' > '**System Name**'
- Enter the name using the **NUMBER KEYS** (as on a mobile phone).
  
- Select the language you want to use in 'Terminal Settings' > '**Language**'.
  
- If you are using two monitors, set 'Utilities' > '**Dual Monitor: On**'.
  
- To activate **AES Encryption, MultiSite<sup>TF</sup>** and/or **Presenter**, enter an option key (see paperwork accompanying your system). See 'Terminal Settings' > '**Software Options**'.
  
- Press **CONNECT** on the IR control. A dial tone should be heard if the network is active.
- Using the monitor remote control, adjust the **VOLUME** on the monitor to a level of your choice. This volume will be the default volume for all calls.

It is critical that the following settings are configured:

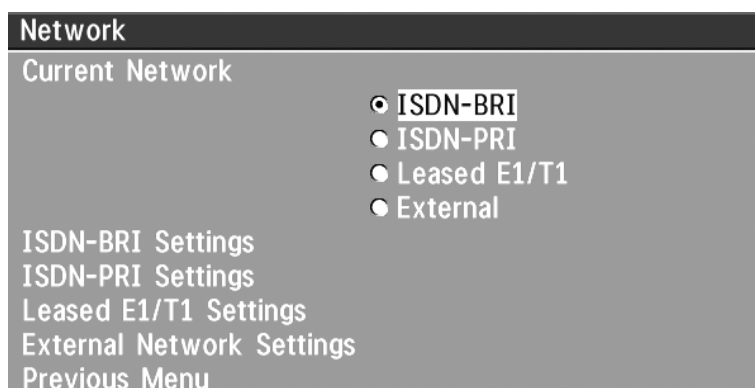
- All network and LAN information (SPIDS, IP Addresses, etc. )
- DuoVideo Mode "Manual"

## Network and LAN Settings

### ISDN configuration

For each installation of the system it is necessary to configure the unit. All configuration parameters are available via the menu system. If you are using an external IMUX or special networks, the external equipment may also need to be configured.

- Press **MENU** on the IR control. Select the menu 'TERMINAL SETTINGS' > '**NETWORK**'.



- Set '**Current Network**' to the network you want to use.
- Specify the settings for the selected network in one of the menus.

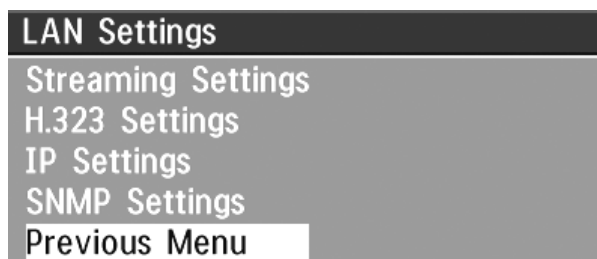
For details, follow the instructions in 'TERMINAL SETTINGS' > '**NETWORK CONFIGURATION**' in this manual.

For further information refer to the examples in:

APPENDIX 1: CONNECTING THE SYSTEM TO ISDN USING NT1 NETWORK ADAPTERS

APPENDIX 2: CONNECTING THE SYSTEM TO THE SWITCHED 56 NETWORK

### LAN configuration



- Press **MENU** on the remote control. Select the menu 'Terminal Settings' > '**LAN Settings**'.
- Specify the necessary LAN settings according to the instructions from your LAN administrator. If there is an H.323 Gatekeeper present on your LAN, see also '**H.323 Settings**'.

For details, follow the instructions in chapter 'LAN SETTINGS' in this manual.

**DuoVideo<sup>TF</sup> Mode**

DuoVideo<sup>TF</sup> is a very useful presentation tool that enables the presenter to display live video from a document camera or another source in addition to the live video of the presenter.

The Director system is set-up to utilize the DuoVideo<sup>TF</sup> feature, however, it requires that the far end videoconferencing system is DuoVideo<sup>TF</sup> enabled. When DuoVideo<sup>TF</sup> operation is possible, a **DUOVIDEO** button will be present on the TASKBAR next to the **VIEW** button. Selecting the **DUOVIDEO** button will change the display to a “traditional” dual screen view where the video screens will be presented side-by-side.

See ‘VIDEOCONFERENCE OPERATION’ > ‘**DUOVIDEO OPERATION**’ for screen description and operation.

# General use

## Adjusting volume

Use the [ + ] and [ - ] on the **TASKBAR** to adjust the volume level; the **IR CONTROLS** can be used as well. An on-screen indicator in the **TASKBAR** (red meter) will show the current volume level.

## Microphone on/off

To mute your microphone during a call, press **MIC MUTE** on the **TASKBAR**. An on screen indicator will appear in the '**remote view**' when the microphone is off, and you will see the **MIC MUTE** button flash red. In a call, if audio is detected, the on-screen symbol will start to flash. Pressing **MIC MUTE** one more time will activate the microphone again.

**NOTE** **MIC MUTE** WILL MUTE AUDIO INPUTS MIC1-3 AND AUDIO4. IT WILL NOT MUTE AUDIO FROM THE AUX AND VCR INPUTS.

## Directory

The TANDBERG Director system has a **DIRECTORY**, similar to a local phone book, that stores up to 100 directory entries including the last number dialed. The entries are sorted alphabetically.

All directory entries and updates should be done through the touch screen interface. Although it is possible to create and update directory entries directly via the codec, any additions or modifications must be "synchronized" with the Director Applications Module through **TOOLS > UPDATE DIRECTORY**.

It is also recommended that you synchronize the directories after any codec upgrades.

When the system receives an incoming call and the calling party's number is found in the directory, the calling party's name will be displayed instead of the number on the status line.

See 'VIDEOCONFERENCE OPERATION' > '**EDITING SPEED DIAL DIRECTORY**' for adding and editing directory entries.

## Projector Standby Button

Press this button to power on the projector lamp.

When finished, press it to put the projector into *reversible* standby mode for five minutes. The screen appears black, but the projector lamp remains on so you can restore the image by pressing any button on the Control Panel. After five minutes, the lamp begins to power down. After an additional 90 seconds, full standby mode is reached.

If you prefer, you can skip the five-minute reversible period: Press and hold the **PROJECTOR STANDBY** button for a few seconds until you see “Please Wait a Moment” appear on the bottom of the screen. Release the button and the lamp starts powering down, reaching full standby mode in 90 seconds.

For the current status of the lamp, check the LED indicator immediately to the left of this button. The table below correlates the behavior of this LED and the status of the projector lamp.

LED Behavior	Projector Lamp Status
Blinking	Lamp is powering up
Remains steady green	Lamp is on
Blinking very fast	Lamp is in reversible standby mode
Blinking slowly	Lamp is powering down
Blinking very slowly	Lamp is off and in full standby mode

<b>NOTE</b>	IF THE PROJECTOR IS ON STANDBY, NO CALLS CAN BE MADE OR RECEIVED.
<b>NOTE</b>	PRESSING THE GREEN POWER BUTTON WILL DISCONNECT ANY CALLS ACTIVE AT THAT TIME.

## MultiSite<sup>TF</sup> (MCU)

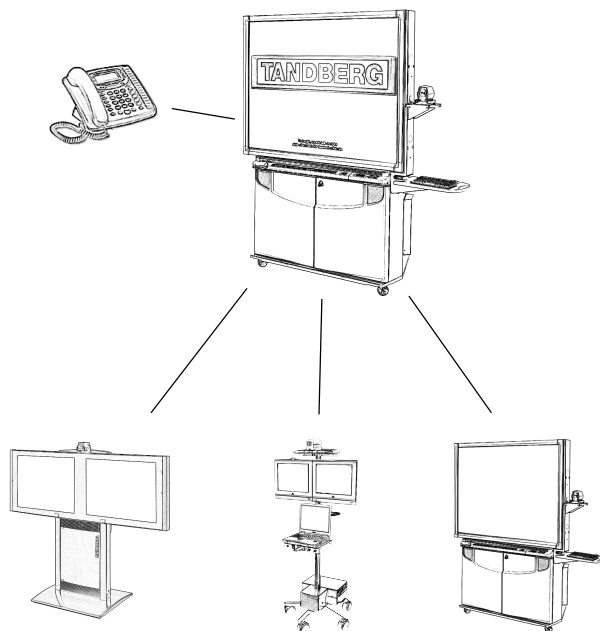
The system has a built-in multipoint conference unit (MCU), MultiSite<sup>TF</sup>, which has the capability to establish meetings with up to 4 video sites (5 if at least one site is a telephone call, ISDN/analogue/mobile).

All video calls in a conference must be connected using the same bandwidth.

A conference can consist of any combination of ISDN/IP sites.

It is possible to have telephone meetings with up to 5 participants.

The MultiSite<sup>TF</sup> supports both Voice Switched and Continuous Presence mode (see 'MCU Services' in 'Advanced Use' for description of these modes).



Establishing a conference is done by first making a call to one site. When a call is established with the first site, the other sites are connected one by one.

It is possible to either dial out to the sites or the sites can dial in to the MultiSite<sup>TF</sup>.

Both ISDN, IP and mixed ISDN/IP conferences can be encrypted if all systems supports encryption.

For encrypted calls, there is a maximum bandwidth of 768 Kbps for the whole conference. This means that a 3-site conference will have a maximum bandwidth of 384Kbps per connection, while a 4-site conference will have a maximum bandwidth of 256 Kbps per connection.

**TIP** SEE 'UTILITIES', 'CONTINUOUS PRESENCE' TO CHANGE MODE.

### MULTISITE - WHICH QUALITY CAN BE USED ON EACH SITE?

(2MBPS VERSION)	4 SITES	4 SITES +1 PHONE	3 SITES	3 SITES+ 1-2 PHONES	P-TO-P + 1-3 PHONES
BRI (768 KBPS)	256 KBPS	192	384	320	512
PRI-E1(1920 k)	512	512	768	768	1472
PRI-T1(1472 k)	384	384	512	512	1152
LAN (3MB)	768	768 *	1152	1152 *	1920 *

**Mix ISDN/LAN EXAMPLE:** IF 4 SITES ARE CONNECTED, TWO LAN SITES AND ONE ISDN SITE CAN BE CONNECTED ON 512 KBPS (2MBPS VERSION) OR 256 KBPS (768 KBPS VERSION). **NOTE** - 4 SITES INDICATES YOURSELF + THREE OTHER SITES.

\* - REQUIRES 1-3 ISDN CHANNELS AVAILABLE.

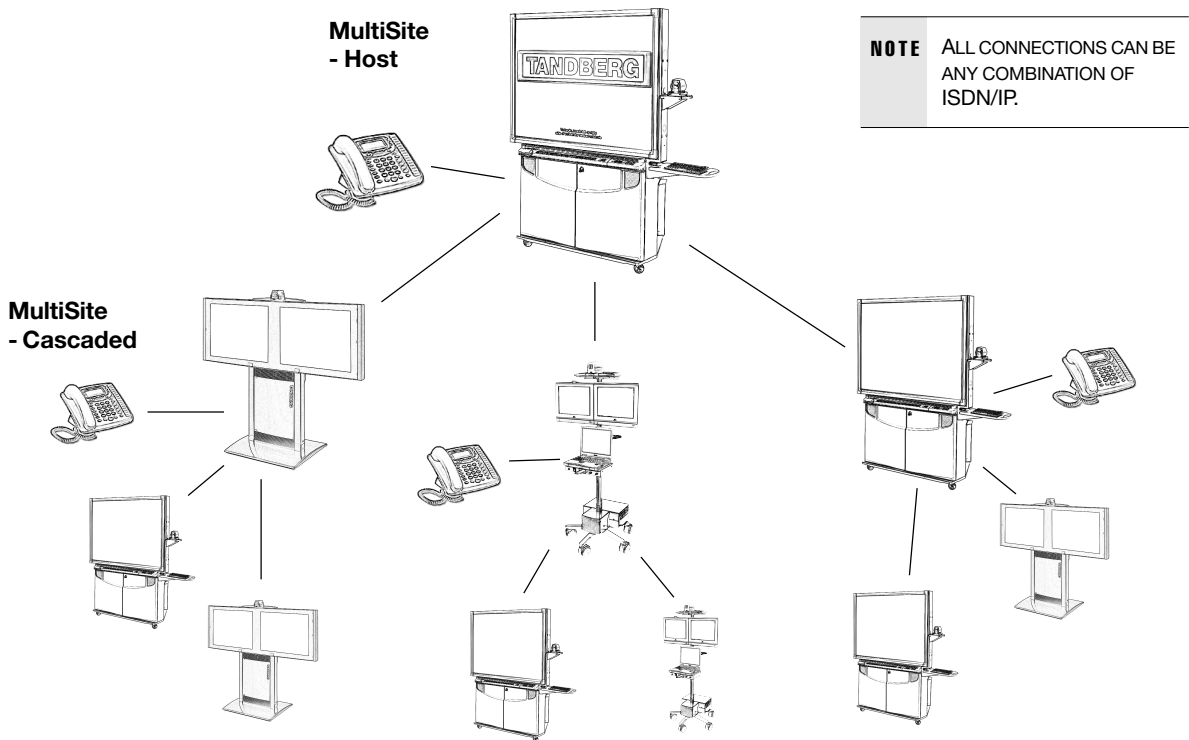
**NOTE** WHEN MIXING ISDN AND LAN SITES, THE TOTAL BANDWIDTH LIMITATION IS THE SAME AS FOR THE ISDN BANDWIDTH.

### MultiSite<sup>TF</sup> cascading

By connecting four MultiSite<sup>TF</sup> systems together, it is possible to connect up to 10 video sites (including the four MultiSite<sup>TF</sup> sites) plus 4 audio sites (telephones), see drawing below.

The host can connect up to 3 other video systems with MultiSite<sup>TF</sup> functionality. The host can use Voice Switched or Continuous Presence mode.

The cascaded systems connect to two other video sites plus one audio site each. These systems will automatically run Voice Switched mode and transmit a full screen image to the host when calling on ISDN. When calling on IP, Voice Switched Mode must be selected manually.



### Establishing MultiSite<sup>TF</sup> meetings using Directory

It is possible to pre-define meetings using Directory. All sites will then be connected automatically instead of having to add each site individually.

- Press **DIRECTORY**.
- Highlight a MultiSite<sup>TF</sup> entry and press **CONNECT**.

See 'VIDEOCONFERENCE OPERATION' > '**MAKING A MULTISITE CALL**' section for further information.



## PC SoftPresenter

PC SoftPresenter is used to display PC images on your system without using a VGA cable (PC Presenter). The TANDBERG video conferencing system and your PC must be connected to a LAN. In addition, VNC (Virtual Network Computing) server software must be installed on the PC.

To show the PC image:

- Start the VNC software on your PC.
- Press **PC** on your remote control. Use UP/DOWN to activate PAGE UP/PAGE DOWN on the PC.

**NOTE** 'PC: VNC' MUST BE SET IN 'VIDEO SETTINGS'.

For setup information and details, see 'VNC SETTINGS' in 'ADVANCED USE'.

## Web-interface

It is possible to access and maintain the system remotely via a local area network (LAN) using a standard Web-browser.

Connect your system from the LAN socket, found on the codec interface panel, to a local area network. Then configure your codec:

- Press **MENU**, select 'Terminal Settings' > '**LAN Settings**'
- Specify IP-assignment '**DHCP**' or '**Static**'. If DHCP is selected no other settings are needed. If Static is selected, '**IP-address**', '**IP-subnet mask**' and '**Gateway**' must be specified.

*EXAMPLE:*

IP-ASSIGNMENT:	STATIC
IP-ADDRESS:	196.9.200.129
IP-SUBNET MASK:	255.255.255.0
GATEWAY:	196.9.200.21

**NOTE** THE SYSTEM MUST BE RESTARTED BEFORE CHANGES IN THE 'LAN SETTINGS' MENU CAN TAKE EFFECT. NOTICE THE ON-SCREEN RESTART QUICK KEY OPTION.

See 'ADVANCED USE' > 'LAN SETTINGS' for further information.

- Start your Web-browser. In the address field type the IP-address of the codec. The Web-page of the codec will be shown.

### Text Chat / Closed Captioning

While in an ISDN or IP call to another system supporting Text Chat (T.140), select '**Text Chat**' from the Web-page of the codec. Enter text in the window displayed. When selecting '**Send Text**', the text will be displayed on the local and far-end monitor as shown below:

The local Text Chat window can be closed manually from the Web-interface by pressing '**Close Window**'. It will also close automatically after a few minutes without activity.

Text from far end site

Text from local site

### Streaming

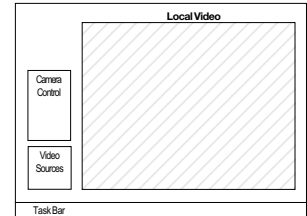
To view streaming, select '**Streaming**' from the Web-page of the codec. See separate 'Streaming' section in this manual for further information.

**NOTE** STREAMING CAN ONLY BE INITIATED ONLY IF IS 'ON'.

# Display Operation

## Local Display Operation

When the system is not in a videoconference call, the default screen is the **'Local Video Display'**. This mode of operation utilizes the Director system's audio and video functionality as a room presentation tool.



## Screen Basics

The controls will work either on the right or left hand side of the screen, depending on the **'Opening Screen'** control selection. In this case where the left side of the opening screen was selected, and the Director Module had been installed in a SMART Board™ system, the user would be right-handed.



The screen has four sections:

- VIDEO DISPLAY WINDOW** where the chosen video source will be displayed.
- DEVICE CONTROL** where controls specific the chosen video source will be displayed. If the device has no associated controls this area will be blank.
- SOURCE SELECTION** where the available video sources can be selected.
- TASKBAR** where the functions relevant to the current system operation will be displayed.

## Source Selection

Press a **VIDEO SOURCE** button to show its image in the display window. The User can change the source selection at any time, the selected source button changes from blue to green when active. Any device controls associated with that source will be displayed in the **Video Display Window** after its selection.

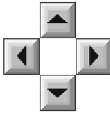




<b>MAIN</b>	Sends the Main source to the video display. If this source has either the TANDBERG WAVE or Sony EVI camera connected it can be controlled. See DEVICE CONTROL.
<b>AUX</b>	Sends the Aux source to the video display. If this source has either the TANDBERG WAVE or Sony EVI camera connected it can be controlled. See DEVICE CONTROL.
<b>DOC CAM</b>	Sends the Document camera to the video display. No device control are available for this source.
<b>VCR / DVD</b>	Sends the VCR or DVD to the video display. No device control are available for this source.
<b>PC</b>	Sends the PC to the video display. If the Director module is installed within the Rear Projection SMART Board 3000i and the PC is running the SMART Board software, annotation and PC operation will be possible.

## Device Control

The **Main** and **Aux** sources can be positioned manually using the camera control buttons or by using the presets.



	<p>Left and Right arrow buttons pan (move horizontally) the camera image.</p> <p>Up and Down arrow buttons tilt (move vertically) the camera image.</p> <p>Camera controls will be available for both Main and Aux sources</p>
	<p>Zooms in (enlarges the view of a participant). Zoom out (reduces the view of a participant).</p>
<p><b>Presets</b></p> 	<p>Moves and zooms either the Main or Aux camera to a predefined room view.</p> <p>To Store a preset: Move the camera to the view required.</p> <p>Press and hold the <b>PRESET</b> button you want to set until the red "preset stored" text appears.</p>

## Taskbar

The grey TANDBERG TASKBAR present at the bottom of the screen provides controls relevant to local presentation operation. The buttons will change according to the display status. The button border and text will illuminate red when it is activated.

**NOTE** TASKBAR REFERENCES ARE FOR THE TANDBERG INTERFACE AND NOT PC OPERATING SYSTEM TASKBARS (I.E. MICROSOFT WINDOWS, MACINTOSH)



<b>HIDE / TASKBAR</b>	<p>HIDE removes the taskbar from the screen, a single Taskbar button replaces it.</p> <p>TASKBAR displays the taskbar on the bottom of the screen</p>
<b>EXIT</b>	<p>EXIT from the local display operation to the Opening screen.</p>
<b>ENLARGE / REDUCE</b>	<p>ENLARGE increases the size of the video display to full screen, thus covering the source selection and device controls. The taskbar will remain available.</p> <p>REDUCE returns the video display to the standard size allowing access to the source selection and device control.</p> <p>It is also possible to enlarge and reduce the video display by touching the video window itself. This function works for all video sources except the PC source</p>
<b>VIDEOCONFERENCE</b>	<p>Select this function to access the VIDEOCONFERENCE CALL CONTROLS and initiate a call.</p>
<b>VOLUME</b>	<p>Increases or decreases the local volume level within the room by using the plus or minus buttons. The level bar indicates the current level setting.</p>

## Video Display Window

Shows the currently selected **VIDEO SOURCE**.

It is possible to enlarge certain video display windows by touching the video window itself.

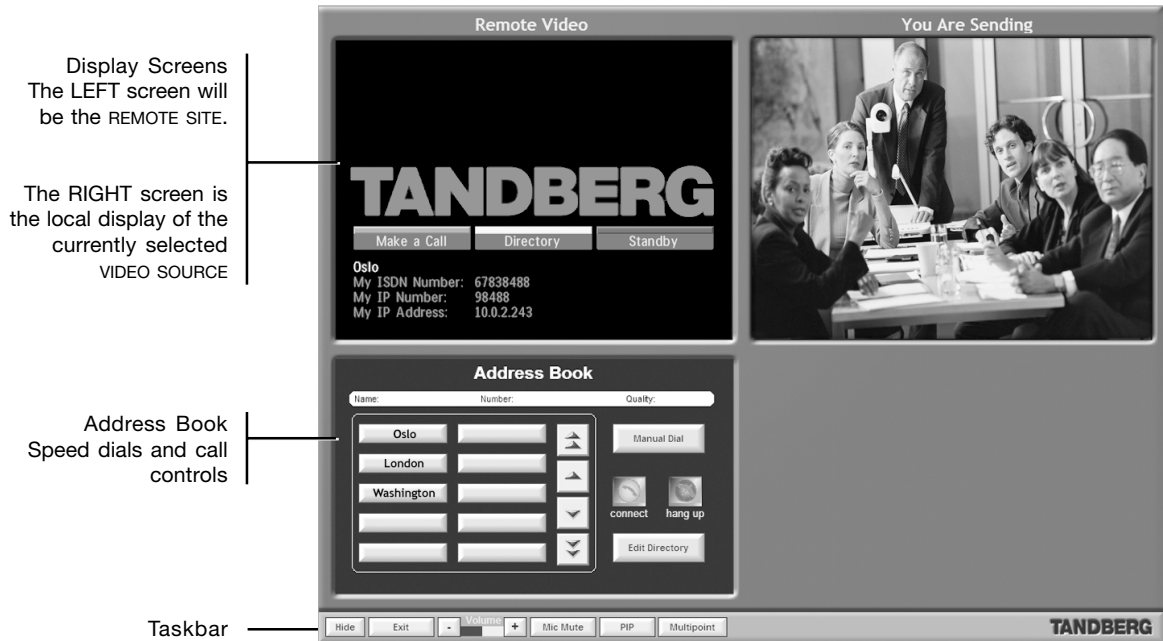
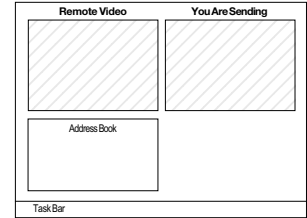
The PC source is configured for on-screen annotation, therefore the **ENLARGE/REDUCE** buttons must be used in this case.

Touching the window again will return it to the previous size.

# Videoconference Operation

## When the Director receives/initiates a video/audio call.

When an incoming call connects the user will be automatically taken to the **Videoconference Main Screen**, otherwise on the **TASKBAR** select the **VIDEOCONFERENCE** button to access the **Call Control Screen**.



## Making Calls

From the **Call Control screen** there are two methods that you can use to make a call: **SPEED DIALING** and **MANUAL DIALING**.

### Speed Dialing

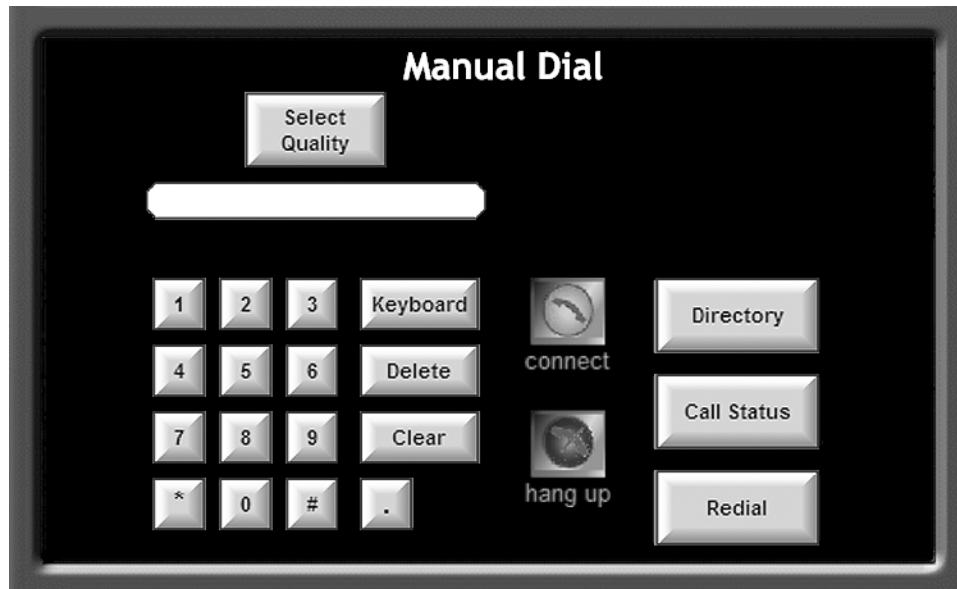
To call a previously set speed dial number:

1. In the **ADDRESS BOOK** select a speed dial site; its call details will be displayed in the white text bar. You can use the **UP/DOWN ARROWS** to scroll or page through all the available speed dials.
2. If this is the site you wish to call press the green **CONNECT** button. The call will be established as defined.
3. If the remote site is not answering select the red **HANG UP** button to disconnect the call.
4. When the call is established the **Videoconference Main Screen** will be displayed.

## Manual Dialing

To manually dial a number:

1. In the ADDRESS BOOK select the **MANUAL DIAL** button.



2. Enter the number of the desired site using the **KEYPAD**. Press **DELETE** to remove the last character or **CLEAR** to start again.
3. Press **SELECT QUALITY** to change the call bandwidth from the default. Use the **UP/DOWN ARROWS** to scroll through the available call bandwidths.
4. Press the green **CONNECT** button. The call will be established as defined.
5. If the remote site is not answering select the red **HANG UP** button to disconnect the call.
6. When the call is established the **Videoconference Main Screen** will be displayed.

On the **Manual Dial** screen the following controls are also available:

<b>REDIAL</b>	will attempt to call the last manually dialed number.
<b>CALL STATUS</b>	will display information on the currently connected calls. Press the <b>BACK</b> button to exit from this screen.
<b>DIRECTORY</b>	will bring you back to the <b>Address Book</b> screen.

## Disconnecting a Call

An active videoconference call can be disconnected at any time.

1. On the **TASKBAR** select **CALL CONTROL** to access the **Call Control** screen.
2. Select the red **HANG UP** button.
3. You will be asked to confirm: **'Yes, Hang up.'**

## Editing Speed Dial Directory

From the **Directory Setup** it is possible to create a new speed dial site or edit an existing one.

**Directory set up**

London  
Washington  
Oslo

Name:   
First Number:   
Second Number:   
Call Quality:

Save New Entry  
Save Entry  
Delete Entry

~ ! @ # \$ % ^ & \* { } - + = Del  
1 2 3 4 5 6 7 8 9 0  
Q W E R T Y U I O P { } | \  
Caps Lock A S D F G H J K L ; : ' " < > ? /  
Shift Z X C V B N M , . / Shift  
Space Clear

7 8 9  
4 5 6  
1 2 3  
0 .

Back

### Creating a new speed dial number

1. In the **Address Book** select **EDIT DIRECTORY** to access the directory set up.
2. Select **ADD NEW ENTRY**
3. Selecting the white text boxes will allow you to enter the name and phone number(s) within that field. The currently selected field will be circled in red. The **CALL QUALITY** can be changed using the **ARROW** buttons.
4. When complete select **SAVE ENTRY**.
5. The speed dial can be edited or removed by selecting it the pressing the **DELETE ENTRY** button. See also **EDITING AN EXISTING SPEED DIAL NUMBER**.
6. Select the **BACK** when complete to return to the **Address Book**.

### Editing an existing speed dial number

1. In the **Address Book** select **EDIT DIRECTORY** to access the directory set up.
2. Select a speed dial site; its details (if any) will be displayed in the white text boxes below the speed dials.
3. Pressing the white text box will allow you to edit its contents, either the name or phone number. The **CALL QUALITY** can be changed using the arrow buttons.
4. Select **SAVE ENTRY** to save and overwrite the existing information.
5. Selecting **CANCEL**, another speed dial, or leaving the directory setup will ignore any edits made to that speed dial.
6. Select **BACK** when complete to return to the **Address Book**.

### Making a MultiSite<sup>TF</sup> Call

If the codec has the MultiSite<sup>TF</sup> option installed it will be possible to make a MultiSite<sup>TF</sup> call using the codec's built in MCU feature. Up to 3 sites can be connected with video, and an additional 4th site can be added as an audio only site.

1. On the Main Videoconference screen select the **CALL CONTROL** button on the **TASKBAR**.
2. From the **Address Book Screen** follow the previously described procedure to either select a Speed Dial.
3. Press the green **CONNECT** button. The call will be established as defined.
4. To manually add another site, select **MANUAL DIAL** and press the **ADD SITE TO CONFERENCE** button:
5. If the remote site is not answering select the red **HANG UP** button to disconnect the call.

## On Screen Symbols

The system has a number of symbols indicating different settings that will be present in the top-right corner of the remote site video window.



This symbol will be shown when the volume is turned off on the system.



This symbol will be shown when the microphone is muted/turned off. It will also start to flash if audio is detected in the room during a call.



A double padlock symbol will be shown when AES encryption (Secure Conference<sup>TF</sup>) is active.



A single padlock symbol will be shown when DES encryption (Secure Conference<sup>TF</sup>) is active.



An open padlock symbol is shown during the initialization phase for encryption. During this period the call is not secure.

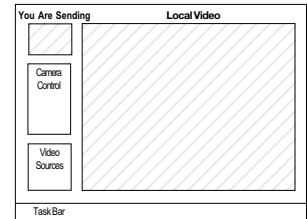


When the system is On Air in a MultiSite<sup>TF</sup> conference, this symbol will be shown.



## Videoconference Main Screen

When a call has been established the conference operation is run from this screen. The fundamentals of SOURCE SELECTION and DEVICE CONTROL mirror that of **Local Display Operation**.



The screen has five sections:

- MAIN VIDEO DISPLAY** shows either the LOCAL VIDEO SOURCE or the REMOTE SITE(S) depending on the conference requirements
- CONFIDENCE DISPLAY** shows either the currently selected VIDEO SOURCE or the REMOTE SITE(S). This source confirms to the user that the remote is still connected or the status of the local source selection.
- DEVICE CONTROL** presents controls specific the chosen video source will be displayed. If the device has no associated controls this area will be blank.
- SOURCE SELECTION** allows the available video sources to be selected.
- TASKBAR** is where the functions relevant to the current system operation will be displayed.

## Video Window Display Control

Touching the smaller confidence video window will bring its image to prominence in the **Main Video Display** with the main screen image moving to the **Confidence display**. The **'Remote View'** and **'You are sending'** headings will change to follow the appropriate video sources.

Touching the main screen will enlarge the image to fill the screen. This function works for the video sources only and not the PC source. The PC source is configured for annotation, therefore use the **ENLARGE/REDUCE** button in this case.

Touching the video display again will return it to the previous size.

## Videoconferencing Taskbar

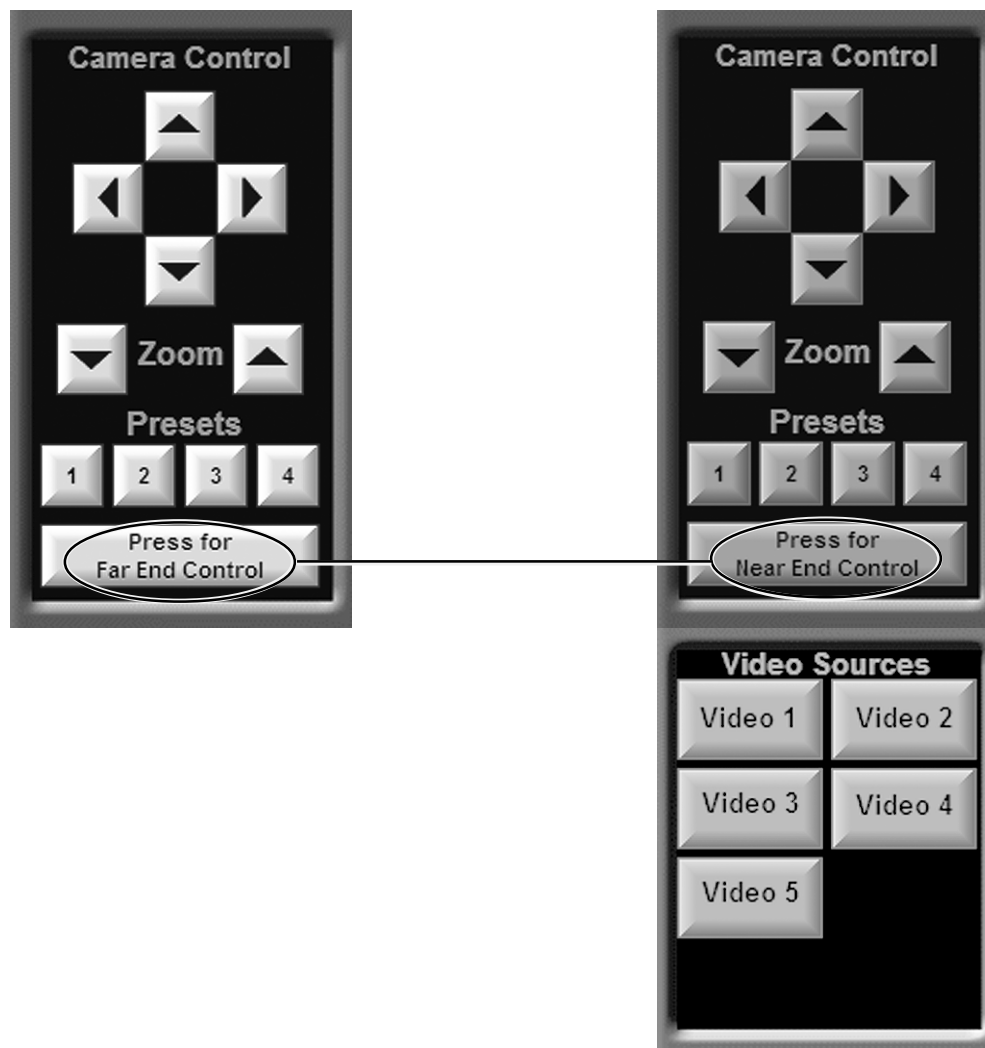
The gray **TASKBAR** present at the bottom of the screen provides controls relevant to the videoconference operation. The text on the button can change depending on the display status. The button border and text will illuminate red when it is activated.



<b>HIDE / TASKBAR</b>	<p><b>HIDE</b> removes the taskbar from the screen, a single Taskbar button replaces it.</p> <p><b>TASKBAR</b> displays the taskbar on the bottom of the screen</p>
<b>CALL CONTROL</b>	Returns to <b>Call Control screen</b> to disconnect current call or add a MultiSite <sup>TF</sup> Call.
<b>VOLUME</b>	Increases or decreases the local volume level within the room by using the arrow buttons. The level bar indicates the current level setting.
<b>MIC MUTE</b>	Disables sound from all microphones within the room. While the mute is active the button border and text is blinking red and an on screen, mic off icon appears. De-activate by pressing Mic Mute again.
<b>PIP</b>	This inserts, moves and removes the picture in picture image on the remote site screen.
<b>ENLARGE / REDUCE</b>	<p><b>ENLARGE</b> increases the size of the video display to full screen, thus covering the source selection and device controls. The taskbar will remain available.</p> <p><b>REDUCE</b> returns the video display to the standard size allowing access to the source selection and device control.</p> <p>It is also possible to enlarge and reduce the video display by touching the video window itself. This function works for the video sources only and not the PC source.</p>
<b>VIEW</b>	<p>This changes the screen view from the default main screen and smaller confidence screen to the more traditional dual screen view.</p> <p style="text-align: center;"> <span style="margin-right: 100px;">Default</span> <span>Dual</span> </p>
<b>MULTIPOINT</b>	Gives the user access to Multipoint control screen.
<b>DUOVIDEO<sup>TF</sup></b>	When DuoVideo <sup>TF</sup> is possible this button will be displayed. Selecting this will initiate the DuoVideo <sup>TF</sup> connection and take the user to the DuoVideo <sup>TF</sup> control screen. See DUOVIDEO <sup>TF</sup> OPERATION.

## Far End Camera Control

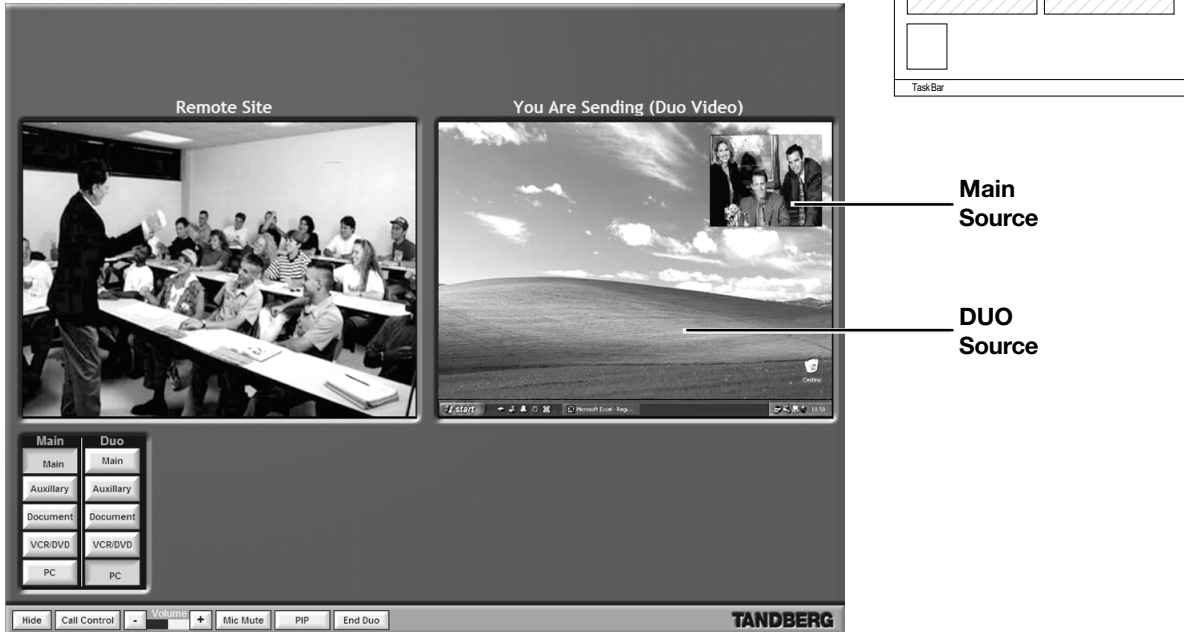
When in a videoconferencing call, it is possible to assume camera control for the far end site's system. When the local camera controls are selected press the **FAR END CONTROL** button. If the far end site is configured for far end camera control, the camera control and source selection will change to red indicating that **FAR END CONTROL** is selected.



The available far end sources will also be displayed and can be controlled if the far end complies. If the far end does not comply, or has this feature disabled, there will be a **'Not Available'** indication displayed under the controls. To return to control of local cameras, press button **NEAR END CONTROL**.

## DuoVideo<sup>TF</sup> Operation

When DuoVideo<sup>TF</sup> operation is possible a DuoVideo<sup>TF</sup> button will appear on the **TASKBAR** beside the **VIEW** button. Selecting this button will change the display to a more traditional dual screen view.

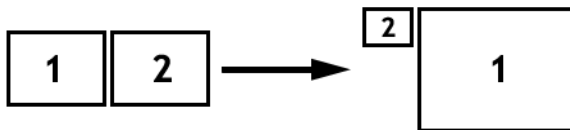


Two groups of source selection are now displayed, the **Main source** selection and **Duo source** selection.

The **Main source** selection controls the image that may be seen on the main screen of the remote system, this image is usually the presenter (the Main or Aux camera).

The **Duo source** selection controls the image that will be seen on the second (local display) monitor of the remote system, this image is usually the content being presented (the document or PC source). The **DEVICE CONTROLS** that appear function for the Duo source only.

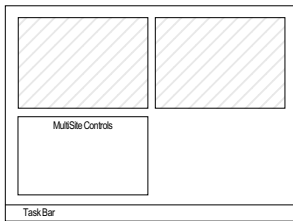
It is still possible by pressing the required video window to view one of the images as the main video display, at which point the screen will reconfigure to the main display and confidence display view.



To stop transmitting DuoVideo<sup>TF</sup>, select the **END DUO** button on the taskbar. The screen will automatically revert back to the default main and confidence view.

## Multipoint Operation

If connected to a multipoint conference by either hosting a TANDBERG MultiSite™ conference or connecting to a third party MCU that supports chair control, a Multipoint button will appear on the taskbar. When selected, the following page will be displayed.



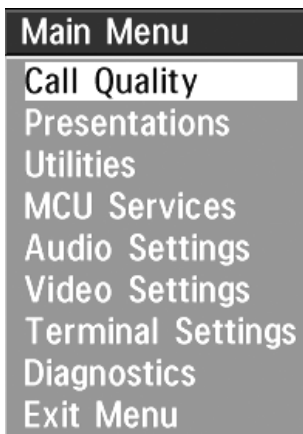
<b>REQUEST FLOOR</b>	Requests the floor during a conference. When granted the site will be seen by all the other participants.
<b>VIEW SITE</b>	Select this button then the site to be viewed. This effects the local site only.
<b>TAKE CHAIR</b> [EXTERNAL MCU]	Allows the user to act as <b>Chairman</b> for the conference. If granted the Chair has the ability to <b>Transmit Sites, Drop Sites, or terminate</b> the meeting.
<b>TRANSMIT SITE</b> [EXTERNAL MCU]	Select this button then the site that will be viewed by all other participants. This function requires <b>Chairman</b> control.
<b>DROP SITE</b> [EXTERNAL MCU]	Select this button, then the site name, and that site will be dropped from the conference. This function requires <b>Chairman</b> control.
<b>END VIEW</b>	If you are the <b>Chair</b> , and a site has been selected to be seen by all other participants, selecting this will return the conference back to a <b>Voice Switched</b> or <b>Continuous Presence</b> conference.
<b>END MEETING</b> [EXTERNAL MCU]	Press and hold the button to end the current conference -- all participants will be disconnected. This function requires <b>Chairman</b> control.
<b>VOICE SWITCHED</b> [MULTISITE CALL]	Set the conference to the <b>voice activated video switching</b> . This function is only available at the host site.
<b>CONTINUOUS PRES.</b> [MULTISITE CALL]	Set the conference to be viewed in the <b>Continuous Presence</b> format. This function is only available at the host site.

# Advanced use

## Main menu

The menu system can be used to select available functions and utilities for the system.

To enter the menu system and the main menu, press the **MENU** key. You may leave the menu system at any time by pressing the **MENU** key.

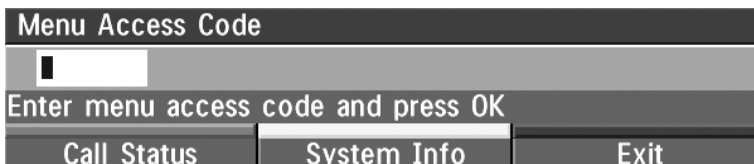


**TIP** A MENU STRUCTURE MAP IS PROVIDED IN THE SECTION 'MENU STRUCTURE' AT THE FRONT OF THIS MANUAL.

**NOTE** IN THE FOLLOWING MENU DIAGRAMS THE DEFAULT SETTINGS ARE HIGHLIGHTED.

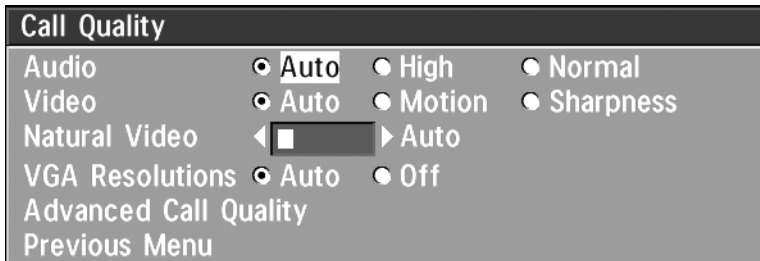
### Menu Password

It is possible to password protect the menus on the TANDBERG system. To activate this feature, specify a Menu Password in the '**Utilities**' menu. By doing this, only dialing and camera control commands will be available. When pressing the **MENU** key, the user will be asked to enter the Menu Password as can be seen below.



## Call quality

The **'Call Quality'** menu allows you to select the preferred quality of your call.



**TIP** **AUTO:**  
1-4 CHANNELS:  
G722.1 IS SELECTED.  
5-30 CHANNELS:  
G722 IS SELECTED.

**NOTE** DUE TO ACTIONS OR LIMITATIONS AT THE FAR END YOU MAY NOT ALWAYS BE ABLE TO ACHIEVE THE SELECTIONS YOU WANT.

### Audio

- AUTO** Optimized audio quality depending on bandwidth.  
**HIGH** High audio quality (G.722) regardless of bandwidth.  
**NORMAL** Telephone quality (G.728) regardless of bandwidth.

### Video

- AUTO** Will select 'Motion' or 'Sharpness' depending on selected video source\*\*.  
**MOTION** Optimized for smooth motion video for all video inputs.  
**SHARPNESS** Optimized for sharp video for all video inputs.

### Natural Video

Choose at what level Interlaced video capabilities (iCIF) will be transmitted and enabled.  
When set to:

- AUTO** Natural Video<sup>TF</sup> will be transmitted from 768Kbps.  
**OFF** Interlaced capabilities will not be transmitted. This is useful if far end cannot handle these capabilities.

### VGA Resolutions

- AUTO** VGA capabilities (VGA/SVGA/XGA) and SIF capabilities will be transmitted and enabled.  
**OFF** VGA capabilities will not be transmitted. Useful if far end can not handle these capabilities.

**TIP** SIF CAPABILITIES WILL ENABLE BETTER VIDEO QUALITY FOR NTSC SYSTEMS (SIF: 352x240, ISIF: 352x480, 4SIF: 704x480).

### Advanced call quality

Advanced Call Quality	
Audio	<input checked="" type="radio"/> Auto <input type="radio"/> G722.1 <input type="radio"/> G722 <input type="radio"/> G728 <input type="radio"/> G711 <input type="radio"/> Off
Video	<input checked="" type="radio"/> Auto <input type="radio"/> H263 <input type="radio"/> H261 <input type="radio"/> Off
Resolution	<input checked="" type="radio"/> Auto <input type="radio"/> 4CIF <input type="radio"/> CIF <input type="radio"/> QCIF
H331	<input checked="" type="radio"/> Off <input type="radio"/> On
Status Format	<input type="radio"/> Auto <input checked="" type="radio"/> Advanced
Previous Menu	

**NOTE** THE SELECTIONS MADE IN THIS MENU WILL OVERRIDE THE SELECTIONS MADE IN THE 'CALL QUALITY' MENU. IF 'AUTO' IS SELECTED, THE SETTINGS IN 'CALL QUALITY' WILL BE USED.

#### Audio

- AUTO** The setting of 'Audio: Auto/High/Normal' in 'Call Quality' will be used.
- G.722.1** Compressed high quality audio (7 kHz).
- G.722** High quality audio (7 kHz).
- G.728** Compressed normal quality audio (telephone quality, 3.1 kHz).
- G.711** Normal quality audio (telephone quality, 3.1 kHz).
- OFF** No audio is transmitted.

#### Video

- AUTO** Optimized video quality depending on available bandwidth.
- H.263** Bandwidth efficient video compression and decompression.
- H.261** Normal video compression and decompression.
- OFF** No video is transmitted.

#### Resolution

- AUTO** The setting of 'Video: Auto/Motion/Sharpness' in 'Call Quality' will be used, see tip above.
- 4CIF** Digital Clarity<sup>TF</sup> (704 x 576 pixels), only for H.263.
- iCIF** Natural Video<sup>TF</sup> (352 x 576 pixels for PAL, 352x480 pixels for NTSC), only for H.263.
- CIF** High resolution video (352 x 288 pixels).
- QCIF** Low resolution video (176 x 144 pixels).

**TIP** RESOLUTION, AUTO FUNCTIONALITY (IF SUPPORTED BY FAR END):  
 WHEN 'VIDEO: MOTION' :  
 LOW BANDWIDTHS: CIF, SIF  
 HIGH BANDWIDTHS: ICIF, ISIF  
 WHEN 'VIDEO: SHARPNESS' :  
 CIF, 4SIF, VGA, SVGA, XGA\*\*

#### H.331

- OFF** Standard two-way communication with quality negotiation between both sides.
- ON** Used when broadcasting a video conference from one site to many others, e.g. via satellite, where there is no possibility to negotiate quality between the receivers and the originator due to one-way communication.

#### Status Format

Provides call quality feedback on the status line.

- AUTO** Video off/on; Audio off/normal/high
- ADVANCED** Shows video/audio standards (Example: Video: H.261 CIF, Audio: G.722).



## Presentations

Presentations			
Presentation Mode	<input checked="" type="radio"/> Normal	<input type="radio"/> Preview	
Duo Video Quality	<input checked="" type="radio"/> Auto	<input type="radio"/> Motion	<input type="radio"/> Sharpness
Duo Video Mode	<input type="radio"/> Auto	<input checked="" type="radio"/> Manual	
Duo Video Number	<input checked="" type="radio"/> Auto	<input type="radio"/> Manual	
Duo Video / Snapshot Source			
	<input checked="" type="radio"/> Current	<input type="radio"/> main cam	<input type="radio"/> aux
	<input type="radio"/> doc cam	<input type="radio"/> vcr	<input type="radio"/> pc
Auto-Display Snapshot		<input type="radio"/> Off	<input checked="" type="radio"/> On
Snapshot Filter		<input type="radio"/> Off	<input checked="" type="radio"/> On
Previous Menu			

### Presentation Mode

To send a snapshot immediately after pressing **SNAPSHOT** select '**Presentation Mode: Normal**'.

To preview the image before it is transferred as a snapshot, select '**Presentation Mode: Preview**'. When pressing **SNAPSHOT** you will be allowed to view your snapshot, e.g. from the document camera, before sending it as a snapshot by pressing **SNAPSHOT** again. The far end will not see the snapshot while you are adjusting it.

### DuoVideo Quality

- AUTO** Optimized video depending on selected video source and bandwidth in use\*\*.
- MOTION** DuoVideo<sup>TF</sup> is optimized for smooth motion video. This mode is ideal if the image from two W.A.V.E II cameras should be simultaneously transmitted to the far end.
- SHARPNESS** DuoVideo<sup>TF</sup> is optimized for sharp video, Digital Clarity<sup>TF</sup>. This mode is ideal when using a document camera or a PC on DuoVideo<sup>TF</sup>. If the far end does not support 4CIF live video, CIF will be selected.

### DuoVideo Mode

- AUTO** Pressing any video source during a call will automatically open DuoVideo<sup>TF</sup> (if the far end supports the automatic DuoVideo<sup>TF</sup> functionality).
- MANUAL** DuoVideo<sup>TF</sup> must be opened by pressing **CONNECT** during a call and selecting '**Add Duo Video**'.

### DuoVideo Number

- AUTO** When adding DuoVideo<sup>TF</sup> in a conference, DuoVideo<sup>TF</sup> is connected automatically if supported by the far end.
- MANUAL** When adding DuoVideo<sup>TF</sup> in a conference and connected towards a system with no DuoVideo<sup>TF</sup> capabilities, enter the DuoVideo<sup>TF</sup> Number into the '**Number**' field in the 'Add DuoVideo' menu. This can be the number to another system (only video will be transmitted to the system receiving DuoVideo<sup>TF</sup>).

**DuoVideo / Snapshot Source**

Select which video source DuoVideo<sup>TF</sup> transmits.

If you want the document camera to be the default source when using DuoVideo<sup>TF</sup> / snapshot, select '**DuoVideo / Snapshot Source: DocCam**'.

To use the same video source as on the first connection for DuoVideo<sup>TF</sup> / snapshot, select '**Duo Video / Snapshot Source: Current**'.

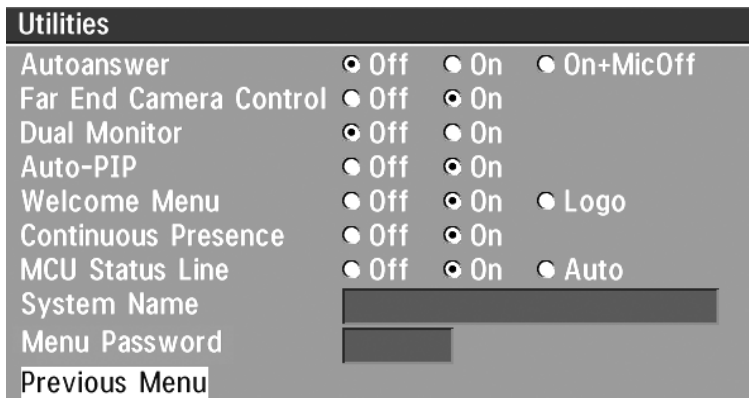
**Auto-Display Snapshot**

Select **On** to automatically display a received snapshot. If this selection is **Off**, you will have to press **SELVIEW** to display a snapshot.

**Snapshot Filter**

Select **On** to remove any instability in the high quality snapshot.

**Utilities**



**Autoanswer**

- ON** The system will automatically answer all incoming calls.
- ON+MICOFF** The system will automatically answer all incoming calls and switch the microphone off when the call is connected. Press **MIC OFF** to switch the microphone on.
- OFF** You must manually answer all incoming calls by pressing the **CONNECT** key.

**Far end camera control**

- ON** The far end will be able to:
  - Control your camera
  - Select your video sources
  - Activate your presets
  - Request snapshots
- OFF** None of the four features above on the local system can be accessed by the far end, however you will still be able to control the camera on the far end.

**Dual Monitor**

- ON** Selfview, snapshots and DuoVideo<sup>TF</sup> will be displayed on the 2nd monitor.  
**OFF** The 2nd monitor shows Selfview only.

**Auto-PIP**

- ON** Your selfview will automatically be displayed (as a Picture-in-picture) whenever the camera position or video source is changed. Picking up the remote control will also display your selfview.

**Welcome Menu**

The Welcome menu can be shown when the system is not in use, and when sleep-mode is not activated.

- ON** The Welcome Menu is shown when the system is not in sleep mode.  
**OFF** The Welcome Menu is not shown.  
**LOGO** If a logo is uploaded to the system, it will be shown when this button is selected. See also **APPENDIX 5**.

**Continuous Presence**

- ON** The screen is divided into three or four blocks, each displaying the video image of a different participant.  
**OFF** The active site will be displayed in full screen during a MultiSite<sup>TF</sup> conference. Also called Voice Switched mode.

**TIP** TO DISPLAY YOUR SITE IN FULL SCREEN WHEN 'ON' IS SELECTED, PRESS THE QUICK KEY 'REQUEST FLOOR'.

**MCU status line**

- ON** The MultiSite<sup>TF</sup>/MCU/DuoVideo<sup>TF</sup> indicators will be displayed and provide information about the conference.  
**OFF** The MultiSite<sup>TF</sup>/MCU/DuoVideo<sup>TF</sup> indicators will not be displayed.  
**AUTO** The MultiSite<sup>TF</sup>/MCU/DuoVideo<sup>TF</sup> indicators will be displayed for a few seconds and then timed out. When grabbing the remote control, the indicators will be shown again.

**System Name**

Identifies the system:

- during an MCU conference call.
- when using the Web-interface.
- when the codec is acting as an SNMP Agent.
- towards a DHCP server.
- as an H.323 ID. Other systems can call us using this name instead of IP-number/IP-address.

**Menu Password**

Enter the code which should be entered to get access to the menu system on the TANDBERG system. When pressing the **MENU** button on the remote control, the user will be asked to enter the Password written here.

## MCU services

A Multipoint Control Unit (MCU) enables several sites to participate in the same conference.

An MCU conference can have different modes:

### Voice Switched

Means that the image of the person currently speaking will be broadcast to all the other conference participants. This will remain the case until another participant starts to speak.

### Continuous Presence

Shows several participants on the same screen at the same time.

### Chairman Control

functionality enables one participant to control the meeting by selecting which of the conference participants is to be broadcast to the other participants.

The system can also control external MCUs in a very flexible manner using the functions described below.

**NOTE** THIS SYSTEM HAS AS AN OPTIONAL BUILT-IN MCU, MULTISITE, WHICH SUPPORTS UP TO 3 VIDEO CALLS (4 SITES) AND ONE TELEPHONE CALL. THE MULTISITE SUPPORTS BOTH VOICE SWITCHED AND CONTINUOUS PRESENCE MODE, SEE SECTION 'MULTISITE'.

**TIP** DURING AN MCU CONFERENCE, A STATUS LINE WILL PROVIDE INFORMATION ABOUT THE CONFERENCE. TO REMOVE THIS STATUS LINE, SELECT 'UTILITIES', 'MCU STATUS LINE: OFF'.

## Quick Menu

When connected to an MCU



**TIP** PRESS ANY QUICK KEY WHEN IN A MULTIPOINT CONFERENCE TO ACTIVATE THE QUICK MENU.

This menu provides access to the most commonly used MCU functions.

If 'Request Floor' is selected, 'Request Floor' will change to 'Release Floor'.

If 'View Site#' is selected, 'View Site #' will change to 'End View'.

Selecting 'Take Chair' will send a request to take chair. If granted, the QUICK KEYS will be:



If 'Floor to Site#' is selected, 'Floor to Site#' will change to 'Rel. Floor To Site'.

If 'Release Chair' is selected, you will return to the original 'Quick Menu'.

## When MultiSite<sup>TF</sup>



If **'Voice Switched'** is selected, 'Voice Switched' will change to **'Cont. Presence'**. This setting can also be changed in the **'Utilities'** menu.

### Request floor

When requesting the floor, the MCU will broadcast your video in full screen to all other participants in the conference. If the MCU conference has a chairman, a floor request is sent to the chairman.

You will remain 'On Air' until either you select **'Release Floor'** or the chairman decides to release the floor to another participant.

### Release floor

You choose **'Release Floor'** to take you 'Off Air'. You should do this when you wish to make the floor available to the other participants in the conference.

### Terminal Names

Allows you to see the site numbers or name (if supported) of other sites connected in the conference.

### View site #

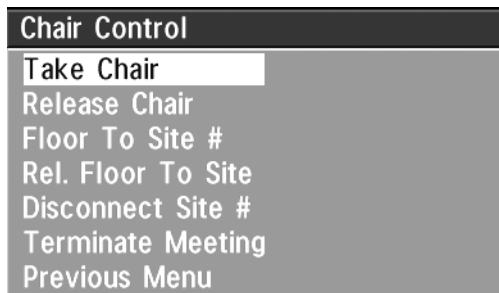
Allows you to view any participant in the conference other than the participant currently 'On Air'.

### End view

Allows you to stop viewing the site previously chosen with **'View Site #'**, and returns your view to the site that is currently 'On Air'.

**TIP** **'VIEW SITE'** AND **'END VIEW'**  
CAN BE USED BY ALL  
CONFERENCE PARTICIPANTS.

## Chair control



**TIP** IN ORDER TO MAKE USE OF CHAIR CONTROL FEATURES THE MCU MUST SUPPORT CHAIR CONTROL (H.243).

You select '**Chair Control**' and '**Take Chair**' to assume the role of chairman of the 'meeting'. As chairman, you may control which site you and the other sites see.

### Take chair

Allows you to request chairmanship of the conference. If no one else is currently chairman the MCU will give you the chair.

### Release chair

Allows you to relinquish the privileges of chairmanship of the conference.

### Floor to site #

Allows the chairman to select which of the conference participants is to be broadcast to all other participants.

### Release Floor To Site

Allows the chairman to release the floor.

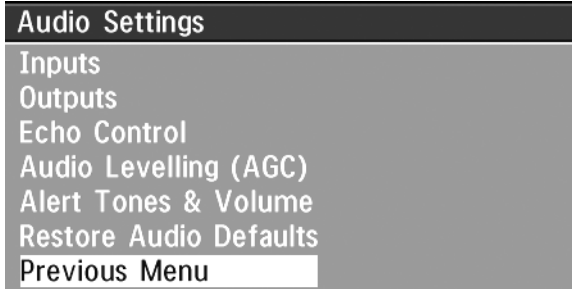
### Disconnect site #

Allows the chairman to disconnect any participant in the conference.

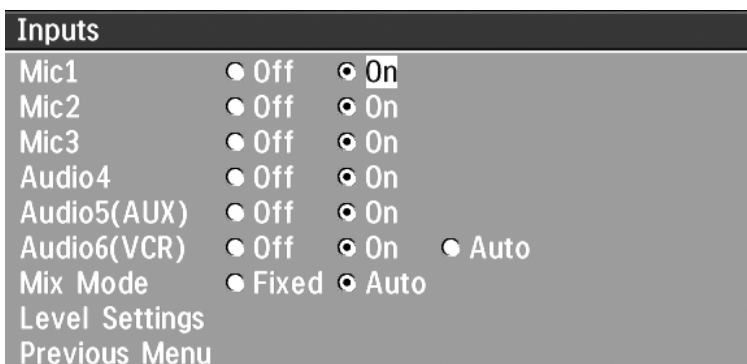
### Terminate meeting

Allows the chairman to terminate the conference altogether.

## Audio Settings



### Audio Inputs



By default, all inputs are enabled. Just plug in an audio source and it is active. Audio inputs that are 'On' will automatically be mixed. Select 'Off' to prevent audio/noise from unused inputs or if you want to disable a specific input. The activated audio sources are stored on presets.

**Mic1**, **Mic2** and **Mic3** are intended for electret type microphones. The microphone inputs are balanced with 24V phantom power.

**Audio4** is intended for connection to an external microphone amplifier or an external fixed mixer.

**Audio5** is intended for connection to external playback devices or to telephone add-on hybrids.

As there is no acoustic echo canceller on this input it should not be connected to any microphones. The audio entering this input will be heard from the local speaker.

#### NOTE EXTERNAL MIXER

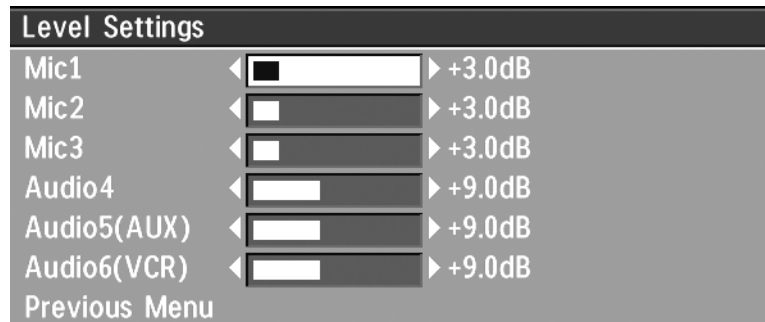
WHEN USING AN EXTERNAL MIXER, IT IS VERY IMPORTANT THAT THIS IS A FIXED MIXER. AUTOMATIC, SMART AND OTHER TYPES OF ADAPTIVE MIXERS MIGHT CAUSE THE ECHO CANCELLER TO MALFUNCTION.

**Audio6** is intended for connection to a VCR. It can also be connected to other external playback devices. As there is no acoustic echo canceller on this input it should not be connected to any microphones. The audio entering this input will be heard from the local speaker. If 'Auto' is selected, the audio from the VCR will only be heard when VCR is selected as videosource.

### Mix Mode

'**Auto**' automatically adjusts the weighting of each microphone to obtain the best possible audio and minimizes the background noise. '**Auto**' will also attenuate the VCR audio level when someone talks into a microphone. '**Fixed**' will maintain a constant weighting for all microphones.

### Level Settings - Inputs



Adjust the audio input levels according to which external audio equipment is connected. The on-screen audio level indicator will make it easier to set the correct input level settings. The input level should be adjusted so that the average level reaches the preferred level marker. The audio inputs are adjustable in steps of 1.5 dB from 0 dB to 22.5 dB.

The default levels for Mic 1, 2 and 3 are set for use with an Audio Technica AT871 microphone in an average videoconferencing room. The gain can be adjusted correctly for a wide range of microphones.

A few examples of microphone levels are:

Audio Technica AT871	+3dB (default with system)
Audio Technica AT851R	+7dB
TANDBERG Audio Science	+19.5dB

Audio inputs 4, 5 and 6 are set to a default level which is adhered to by most manufacturers of audiovisual equipment and is a level at which most audiovisual equipment (CD-players, VCRs) will work.



## Audio Outputs

Outputs		
Out1	<input type="radio"/> Off	<input checked="" type="radio"/> On
Out2(AUX)	<input type="radio"/> Off	<input checked="" type="radio"/> On
Out3(VCR)	<input type="radio"/> Off	<input checked="" type="radio"/> On
Audio Module	<input type="radio"/> None	<input type="radio"/> NAM <input checked="" type="radio"/> NAM II
Level Settings		
Previous Menu		

**Out1** is intended for connection to TANDBERG Natural Audio, televisions or audio amplifiers.

**Out2** is intended for connection to audio recording equipment or to a telephone add-on hybrid. The signal is a mix of audio from both the far end and local end (not from Audio in 5).

**Out3** is intended for connection to a VCR or other recording equipment. The signal is a mix of audio from far end and local end (not from Audio in 6).

**Audio Module:** Select Natural Audio Module (NAM or NAM II) according to the type of Audio Module installed.

If an output is '**Off**', no audio will be sent to that output.

**NOTE** NEVER CONNECT AUDIO OUT 2 OR AUDIO OUT 3 TO A LOUDSPEAKER PLACED IN THE SAME ROOM AS THE MICROPHONES CONNECTED TO THE SYSTEM. DOING THIS WILL CAUSE "HOWLING" AND POSSIBLE DAMAGE TO THE SPEAKER SYSTEM.

## Level Settings - Outputs

Level Settings		
Out1	<input type="range" value="13.5"/>	+13.5dB
Out2(AUX)	<input type="range" value="13.5"/>	+13.5dB
Out3(VCR)	<input type="range" value="13.5"/>	+13.5dB
Previous Menu		

Adjust the audio output levels according to the parameters of the external audio equipment connected. These levels should only be adjusted when installing new audio equipment. The default settings are correct for most consumer electronics devices (televisions, VCRs, etc.).

The volume buttons on the IR control adjust the level of output 1 (the speaker output). The volume control has no effect on outputs 2 and 3.

## Echo Control

Echo Control			
Mic1	<input type="radio"/> Off	<input type="radio"/> On	<input checked="" type="radio"/> On+NR
Mic2	<input type="radio"/> Off	<input type="radio"/> On	<input checked="" type="radio"/> On+NR
Mic3	<input type="radio"/> Off	<input type="radio"/> On	<input checked="" type="radio"/> On+NR
Audio4	<input type="radio"/> Off	<input type="radio"/> On	<input checked="" type="radio"/> On+NR
Room Size	◀ [Slider] ▶		Medium (8)
Motion	◀ [Slider] ▶		Medium (8)
Previous Menu			

Each of the 3 microphone inputs and Audio input 4 have a separate echo canceller. One echo canceller per input provides more sophisticated control than having one common canceller for all microphones.

Echo control is normally set to 'On' to prevent the far end from hearing their own audio. Once selected, echo cancellation is active at all times. The echo canceller continuously adjusts itself to the audio characteristics of the room and compensates for any changes it detects in the audio environment. If the changes in the audio conditions are very significant the echo canceller may take a second or two to readjust.

You can choose to switch off the echo canceller for the available audio sources.

**NOTE** ECHO CONTROL SHOULD BE SWITCHED 'OFF' IF EXTERNAL ECHO CANCELLATION OR PLAYBACK EQUIPMENT IS USED. IT IS YOUR ECHO CANCELLER THAT IMPROVES THE AUDIO QUALITY EXPERIENCED BY THE OTHER SITE. WHEN YOU HEAR AN ECHO OF YOUR OWN AUDIO IT IS MOST LIKELY THE FAR END'S ECHO CANCELLER THAT IS MALFUNCTIONING.

## Noise Reduction

In addition to echo cancellation, the system has built-in noise reduction (NR).

NR reduces constant background noise (e.g. noise from air-conditioning systems, cooling fans etc.). In addition, a highpass filter (Humfilter) reduces very low frequency noise.

Choose 'On+NR' to activate both Echo Control and Noise Reduction.

## Room Size

This setting allows optimization of the echo canceller to the acoustic size of the room. Hard walls, many windows etc. might require higher settings than expected. Carpets, curtains etc. might require lower settings. Adjust the setting (NOTE: on the far end) if one of the following symptoms occur:

- There is still some echo of your own audio. Increase the setting.
- The system adapts slowly to acoustic changes in the room. Decrease the setting.

After a change, the system will need a few seconds to re-adjust.

## Motion

If you experience echo caused by movements in the room, increase the value.

## Automatic Gain Control (AGC) Settings

Audio Levelling (AGC)	
Mic1-3,Audio4	<input type="radio"/> Off <input checked="" type="radio"/> On
Audio5(AUX)	<input type="radio"/> Off <input checked="" type="radio"/> On
Audio6(VCR)	<input type="radio"/> Off <input checked="" type="radio"/> On
Received Audio	<input checked="" type="radio"/> Off <input type="radio"/> On
Previous Menu	

Select **'On'** to allow automatic adjustments (Automatic Gain Control) of audio levels. When **'On'**, the AGC maintains the audio signal level at a fixed value by attenuating strong signals and amplifying weak signals. Very weak signals, i.e. noise alone, will not be amplified.

### EXAMPLE:

IN MOST CONFERENCES, THE PARTICIPANTS WILL SPEAK AT DIFFERENT LEVELS, AND BE AT DIFFERENT DISTANCES FROM THE MICROPHONES. AS A RESULT, SOME OF THE PARTICIPANTS WOULD BE HARDER TO HEAR THAN OTHERS. THE AGC CORRECTS THIS PROBLEM BY AUTOMATICALLY INCREASING THE MICROPHONE LEVELS WHEN "QUIET" OR "DISTANT" PEOPLE SPEAK, AND BY DECREASING THE MICROPHONE LEVELS WHEN "LOUDER" PEOPLE SPEAK.

### NOTE

TO ENSURE CORRECT BEHAVIOR OF THE AGC, IT IS CRUCIAL THAT THE LEVELS ON THE INPUT CONNECTORS ARE ADJUSTED CORRECTLY USING THE AUDIO INPUT LEVEL SETTINGS. THE AGC WILL NOT COMPENSATE FOR SEVERE MISADJUSTMENT OF INPUT LEVELS.

When applying a weak signal in the presence of strong background noise, the leveller might amplify the background noise as well as the signal. Therefore, in noisy environments, it is advisable to turn the leveller off.

### Tips for improving the echo canceller performance:

- Place all microphones as far as possible from the loudspeaker. Minimum loudspeaker-microphone distance should be 1 meter.
- Place all microphones as close as possible to the persons speaking. By using several microphones, the ratio distance loudspeaker-to-mic/mic-to-speaker can be increased. Increasing this ratio improves the echo canceller performance. Avoid distances above two meters from any participant to his/her closest microphone. If necessary, use several microphones. Also avoid placing microphones less than one meter from any person.
- Place all microphones as far as possible from noise sources.
- Reduce the volume setting. Ensure that the loudspeaker does not distort the audio.
- The echo canceller tries to estimate the echo path from the speaker system to the microphones. Moving objects change this path, therefore try to avoid moving objects. Be especially aware of large objects and objects placed close to either the microphone or the speaker system as these objects will cause severe changes to the echo path.
- Avoid putting paper sheets etc. on the microphone.
- Avoid moving the microphone or loudspeaker.
- In the event of poor echo cancelling, allow the canceller to adapt. After each change, the echo canceller requires a few seconds to adapt. Do not change the settings without allowing the echo canceller to adapt to the new audio environment.
- In the presence of low frequency noise, enable the noise reduction (NR).

## Alert Tones & Volume

Alert Tones & Volume	
Video Call Alert Tone	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D <input type="radio"/> E <input type="radio"/> F
Telephone Alert Tone	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> D <input type="radio"/> E <input type="radio"/> F
Alert Volume (0=min)	<input type="range" value="1"/> 1
Alert Speaker	<input type="radio"/> Off <input checked="" type="radio"/> On
Previous Menu	

To help distinguish between incoming video calls and ordinary telephone calls, different ringing tones may be selected. You may also select different volume levels for the ringing tone.

### Alert Speaker

The codec also has an internal, call alerting speaker.

- ON** The internal speaker will warn you of an incoming call even though the monitor may not be switched on.

### Restore Audio Defaults

There are many audio settings. It is easy for the user to configure the codec to be unusable. Therefore it is possible to return all audio settings to their factory default settings by using 'Restore Audio Defaults'.

## Video Settings

Video Settings	
Camera Tracking Mode	<input type="radio"/> Slow <input checked="" type="radio"/> Norm <input type="radio"/> Fast
Document Camera	<input checked="" type="radio"/> Video2 <input type="radio"/> Video3
PC	<input checked="" type="radio"/> VGA <input type="radio"/> VNC
Focus	
Brightness	
Whitebalance	
Video Name	
VGA Settings	
VNC Settings	
Previous Menu	

**NOTE** THE CAMERA TRACKING MODE ENTRY WILL NOT BE AVAILABLE IF NOT USING THE WAVE CAMERA.

### Camera Tracking Mode

Select the camera tracking mode:

- SLOW** The system waits a while before zooming in on a single person speaking. Suitable when wide-angle images are preferred over close-up images.
- NORM** Should be used in regular meetings.
- FAST** The system quickly zooms in on a single person speaking. Suitable when close-ups are preferred over wide-angle images.

## Document Camera

Users of a document camera with an S-video output can configure the system to activate an S-video input when pressing **DOC CAM** on the remote control.

- VIDEO2** Video Input 2 (S-video) will be activated when pressing **DOC CAM** on the remote control.
- VIDEO3** Video Input 3 (Composite) will be activated when pressing **DOC CAM** on the remote control.

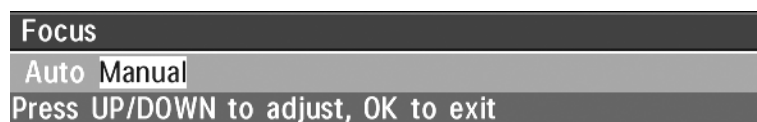
## PC

Configure what should be activated when pressing **PC**.

- VGA** Pressing **PC** will activate the VGA input on the system (default).
- VNC** Pressing **PC** will use VNC to show images from your PC (see 'VNC Settings' for further information).

## Focus

To manually adjust the focus select '**Manual**' and use the **ARROW KEYS** to adjust.



## Brightness

To manually adjust the brightness select '**Manual**' and use the **ARROW KEYS** to adjust.



## Whitebalance

In '**Auto**' mode the whitebalance is continuously updated. To update the whitebalance manually, select '**Manual**' and press **OK**.



**TIP** A WHITE OBJECT SHOULD BE HELD IN FRONT OF THE CAMERA A FEW SECONDS BEFORE AND AFTER SELECTING MANUAL WHITEBALANCE.

### Video Name

Video Name	
Video1	main
Video2	doc
Video3	aux
Video4	vcr
VGA	pc
Previous Menu	

Each video input defaults to the same name used on the remote control to select a video input.

To edit the name, use the number keys on the remote control to select letters. Press **DELETE** to erase a letter.

### VGA Settings

VGA Settings	
<b>NOTE: Only change to Main or Dual if a VGA monitor is connected.</b>	
VGA Out	<input type="radio"/> Main <input type="radio"/> Dual <input checked="" type="radio"/> Loop
VGA Out Quality	<input type="radio"/> Auto
	<input type="radio"/> VGA 640x480, 60Hz
	<input checked="" type="radio"/> SVGA 800x600, 60Hz
	<input type="radio"/> XGA 1024x768, 60Hz
Previous Menu	

**NOTE** IF YOU SET 'VGA OUT' TO 'MAIN', MAKE SURE YOU HAVE A VGA-MONITOR CONNECTED TO THE VGA-OUTPUT ON THE SYSTEM. IF YOU DO **NOT** HAVE A VGA-MONITOR CONNECTED, YOU WILL NOT BE ABLE TO SEE THE MENU SYSTEM!

**NOTE** iCIF WILL NOT BE AVAILABLE WHEN VGA OUT IS MAIN OR DUAL.

### VGA Out

To enhance the local video quality, a VGA monitor may be connected.

- MAIN** Should be used if you want to use a VGA monitor as your main monitor. Video outputs 1 & 3 will be disabled.
- DUAL** Should be used if you want to use a VGA monitor as your dual monitor. Video outputs 2 & 4 will be disabled.
- LOOP** Should be used if you want to use a TV monitor as your main monitor.

### VGA Out Quality

VGA Out Quality changes the resolution of the VGA signal available on the 'VGA Out' connector at the rear of the codec.

- AUTO** Will sense the resolution on the '**VGA input**' port and use the same resolution on the '**VGA Out**' port.
- VGA** Will force '**VGA out**' to VGA (640X480).
- SVGA** Will force '**VGA out**' to SVGA (800X600).
- XGA\*** Will force '**VGA out**' to XGA (1024X768).

\* E1 ONLY

## VNC Settings

VNC Settings	
Address	127 . 0 . 0 . 1
Display Number	0
Password	*****
Previous Menu	
VNC: Idle	
	Back

### Address

The IP-address of the PC with the VNC software installed. To find the IP-address of the PC, select 'Command Prompt' from the Windows Start menu. Type 'ipconfig' and press ENTER.

### Display Number

The display number for VNC is 0 and upwards. If you are using WinVNC, double-click on the icon on the toolbar to view 'WinVNC properties'. This number should correspond with '**Display Number**' in this menu.

### Password

Enter the same password as specified in WinVNC properties. The password will be shown as asterisk signs (\*) the next time you enter the menu.

### Start using VNC

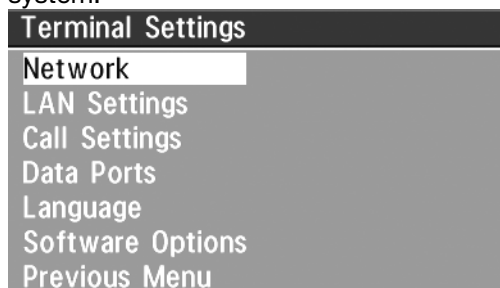
To activate VNC, press **PC** on the remote control. Please make sure that 'PC' is set to '**VNC**' in the '**Video Settings Menu**'. See also 'PC SOFTPRESENTER' section for further information.

#### NOTE VNC SERVER SOFTWARE SETUP

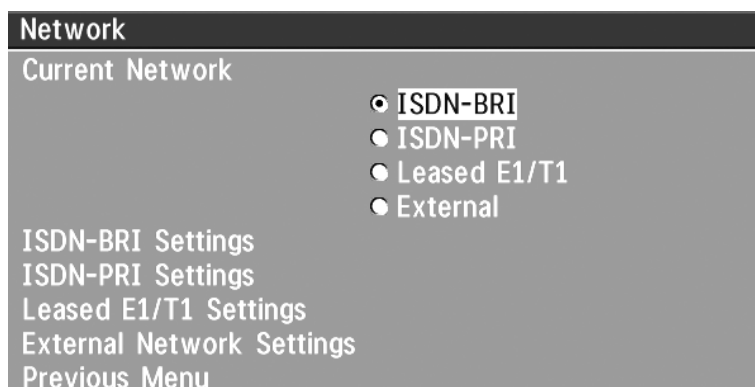
- BOTH THE PC AND THE VIDEOCONFERENCING SYSTEM MUST BE CONNECTED TO THE SAME LAN.
- A VNC SERVER MUST BE INSTALLED ON THE PC. FREE SOFTWARE CAN BE DOWNLOADED FROM [HTTP://WWW.UK.RESEARCH.ATT.COM/VNC](http://www.uk.research.att.com/vnc)
- INSTALL THE SOFTWARE BY RUNNING THE DOWNLOADED FILE.
- TO CONFIGURE THE VNC SERVER SOFTWARE:
  - SELECT "ACCEPT SOCKET CONNECTIONS".
  - SELECT "AUTO" FOR "DISPLAY NUMBER". 'DISPLAY NUMBER' IN THE SYSTEM MUST THEN HAVE THE VALUE 0.
  - ENTER A PASSWORD IN THE "PASSWORD"-FIELD. MUST CORRESPOND WITH THE 'VNC SETTINGS' ON YOUR SYSTEM.

## Terminal Settings

This menu provides basic network setup for the unit and should be used when installing the system.



### Network Configuration



Before using the system it is necessary to specify which network to use and define its settings.

If you want to use your system via ISDN-BRI you should select '**Current Network: ISDN-BRI**' and enter the '**ISDN-BRI Settings**' menu to set the BRI parameters.

If you want to use your system via ISDN-PRI you should select '**Current Network: ISDN-PRI**' and enter the '**ISDN-PRI Settings**' menu to set the PRI parameters.

If you want to use your system via Leased E1/T1, you should select '**Current Network: Leased E1/T1**' and enter the '**Leased E1/T1 Settings**' menu to set the Leased E1/T1 parameters.

**NOTE** BOTH 'LEASED E1/T1' AND 'ISDN-PRI' USES THE SAME PHYSICAL INTERFACE ON THE CODEC MARKED 'E1/T1'.

If you want to use special networks and connect using RS449, V.35, X.21 or connect to ISDN via an external IMUX you should select '**Current Network: External**' and enter the '**External Network Settings**' menu to set the External Network parameters.



### ISDN-BRI Settings

**ISDN-BRI Settings**

ISDN Switch Type

Line 1 Setup

Line 2 Setup

Line 3 Setup

Line 4 Setup

Line 5 Setup

Line 6 Setup

Advanced ISDN Settings

Previous Menu

**NOTE** SOME SOFTWARE VERSIONS DO NOT SUPPORT 6 ISDN LINES, THEREFORE SOME OF THE LINE SETUP LINES MAY BE GRAYED OUT.

**NOTE** IF NATIONAL ISDN IS SELECTED, PRESS THE QUICK KEY '**AUTO BRI CONFIG**' TO REQUEST AN AUTOMATIC CONFIGURATION OF THE LINE & SPID SETTINGS (SWITCH MUST SUPPORT GR-2941-CORE).

**NOTE MANDATORY ISDN-BRI SETTINGS:**  
 TO MAKE SURE YOUR SYSTEM WILL WORK PROPERLY USING ISDN-BRI, MAKE THE FOLLOWING SETTINGS:  
 - SET ISDN SWITCH TYPE  
 - ENTER ISDN LINE NUMBERS (+ SPIDS IF REQUIRED)  
 - DISABLE UNUSED LINES

### ISDN switch type

Select the type of ISDN network connected to your unit.

**ISDN Switch Type**

ISDN Switch Type

- ETSI (Euro ISDN)
- 1TR6
- Australia ISDN
- Japan/Taiwan ISDN
- National ISDN
- AT&T Custom ISDN
- Fetex ISDN

Previous Menu

**NOTE** 1TR6 SHOULD ONLY BE USED IF YOU ARE OPERATING THE SYSTEM BEHIND A PABX.

### Line setup

This menu allows you to program the numbers associated with your ISDN line.

**Line 1 Setup**

Enabled  Off  On

Number1 67838498

Number2 67838498

SPID1

SPID2

Previous Menu

If you want to use this ISDN line, you need to set **'Enabled: On'** and enter the numbers of your ISDN line. If some of the ISDN lines are not to be used, set **'Enabled: Off'**. Line 1 should always be enabled.

National ISDN and AT&T Custom ISDN might require SPID numbers associated with your ISDN numbers. If you have received two different SPID numbers for each ISDN line from your telephone company, you must program both.

*Example:*

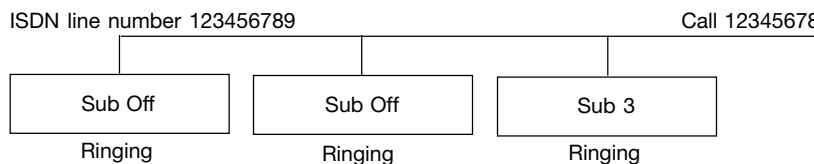
	Numbers	SPIDS
<b>ISDN BRI 1:</b>	67838498	016783849800
	67838498	016783849810
<b>ISDN BRI 2:</b>	23478060	012347806000
	23478070	012347807000
<b>ISDN BRI 3:</b>	23478420	012347842000
	23478430	012347843000
<b>ISDN BRI 4:</b>	23478520	012347852000
	23478530	012347853000
<b>ISDN BRI 5:</b>	23478540	012347854000
	23478550	012347855000
<b>ISDN BRI 6:</b>	23478560	012347856000
	23478570	012347857000

**Advanced ISDN settings**

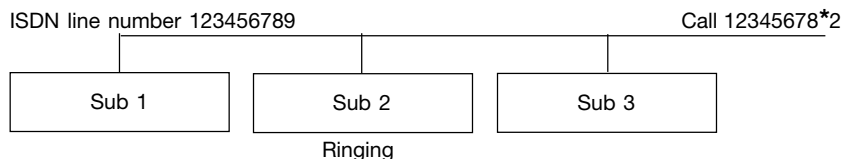
**Subaddress**

Using a subaddress enables you to connect up to eight ISDN terminals to the same ISDN telephone number and line. The terminals are addressed by using different subaddresses.



To call a terminal with a subaddress, separate the ISDN telephone number and the subaddress with a '\*'.  
 a '\*\*'.

*EXAMPLE:* 12345678\*2 (UP TO FOUR DIGIT SUBADDRESSES ARE POSSIBLE)

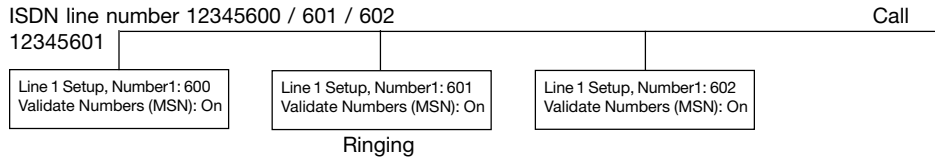


**NOTE** THIS SERVICE HAS LIMITED ACCESS ON SOME ISDN NETWORKS.

**MSN (Multiple Subscriber Number)**

The use of MSN (Multiple Subscriber Number) enables you to attach different ISDN terminals, with different numbers, to the same physical ISDN telephone line. If **‘Validate Numbers’** is set to **‘On’** only calls to those numbers specified in the ‘Line Setup’ menus will be answered. This service can be ordered from your telephone company.

**Parallel dial**



- ON** Channels will be dialed and connected in parallel when setting up a BONDING call.
- OFF** Channels will be dialed one by one which may increase the dialing time.

**Send Own Numbers**

- ON** The system will send its own numbers to the far end.
- OFF** The system will not send its own numbers to the far end, but please note that the network may still send your numbers to the far end.

**Sending Complete**

- ON** The system will send the ISDN message information element ‘Sending Complete’.
- OFF** The system will not send ‘Sending Complete’.

**ISDN-PRI Settings**

**ISDN-PRI Settings**

- Number
- ISDN-PRI Switch Type
- Channel Hunting
- Line Settings
- Advanced ISDN Settings
- Advanced ISDN-PRI Settings
- Previous Menu

**NOTE** THE T1 FORMAT IS PREDEFINED TO ESF AND THE LINE CODE IS B8ZS. THIS IS NOT CONFIGURABLE.

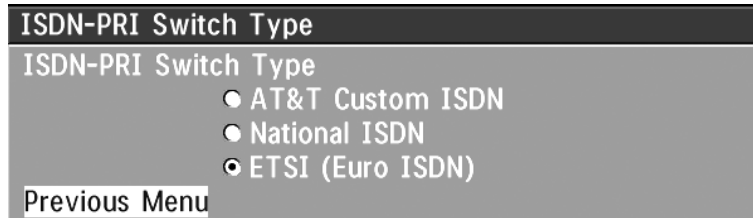
**NOTE** MANDATORY ISDN-PRI SETTINGS  
 TO MAKE SURE YOUR SYSTEM WILL WORK PROPERLY USING ISDN-PRI, CONFIGURE THE FOLLOWING SETTINGS:  
 - SET PRI SWITCH TYPE  
 - ENTER PRI LINE NUMBER

**Number**

Enter the main number for your PRI line. If this number is programmed and **‘MSN: On’** (see ‘Validate numbers’ in ‘Advanced ISDN Settings’) only calls to this number will be answered.

### PRI Switch Type

Select the type of PRI switch to which your unit is connected.

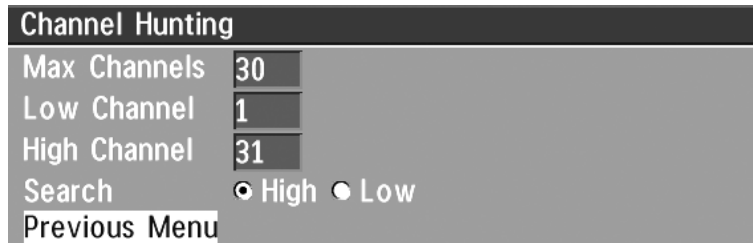


Below is a list of common ISDN-PRI/T1 switches.

Type	Manufacturer	PRI Switch Type setting
ATT 4 ESS	AT&T	AT&T ISDN
ATT 5 ESS	AT&T/Lucent	AT&T ISDN or National ISDN*
DMS 100	Northern Telecom	National ISDN
DMS 250	Northern Telecom	National ISDN

\* SETTINGS WILL DEPEND ON CONFIGURATION OF THE SWITCH. PRI SWITCH TYPE IS NOT CHANGED WHEN RESTORING DEFAULTS.

### Channel Hunting



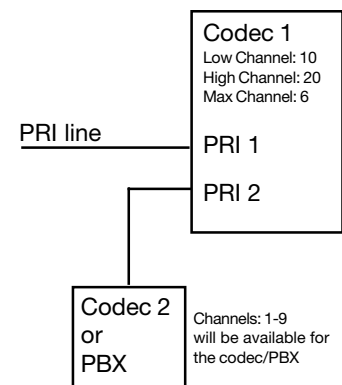
- MAX CHANNELS** Maximum number of channels the unit may use at any given time.
- LOW CHANNEL** The lowest numbered B-channel that may be used by the unit when selecting channels for outgoing calls.
- HIGH CHANNEL** The highest numbered B-channel that may be used by the unit when selecting channels for outgoing calls.
- SEARCH** Specifies where the system will start searching for available B-channels for outgoing calls.

Channel hunting is normally used in conjunction with PRI daisy-chaining with TANDBERG units in the daisy-chain. If only TANDBERG units are used in the daisy-chain, default setting should be used, as these units will find available B-channels automatically.

'Max Channels' may be used for PRIs that are provisioned for a lower number of channels.

'Max Channels' may be used as mechanism to ensure that there is bandwidth available to codecs further down the chain when Daisy-Chaining.

'High Channel', 'Low Channel' and 'Search' may be used for PRIs provisioned with specific requirements for B-channel usage.



In the example on the previous page, the unit will start searching for available B-channels at channel 20, since 'Search' is set to 'High' and 'High Channel' is set to 20. The unit will not search for channels below 10, since 'Low Channel' is set to 10. Furthermore if the user tries to make an 8 channel call, the call will be established with 6 channel, since 'Max Channels' is set to 6.

### Line Settings

Line Settings	
T1 Cable Length 1	<input type="text" value=""/> 0-115 ft
T1 Cable Length 2	<input type="text" value=""/> 0-115 ft
E1 CRC-4	<input type="radio"/> Off <input checked="" type="radio"/> On
<input type="button" value="Previous Menu"/>	

'**T1 Cable Length 1**' specifies the distance to the CSU connected to the 'E1/T1 1' port on codec 1. '**T1 Cable Length 2**' specifies the cascading distance from the 'E1/T1 2' port on codec 1 to the 'E1/T1 1' port on codec 2. Possible values are 0-115 feet, 80-215 feet, 180-310 feet, 280-410 feet, 375-510 feet, 475-605 feet, 575-690 feet.

**E1 CRC-4** is used for most E1-PRI configurations. You can turn it off if not supported by your E1 network equipment.

For further information refer to Appendix 3: Connecting the system to PRI/T1

### Advanced ISDN Settings

This is the same menu as for ISDN-BRI. The settings will be common for ISDN BRI and ISDN PRI. Please refer to section 'ISDN-BRI Settings'.

Advanced ISDN Settings	
Subaddress	<input type="text" value=""/>
Validate Numbers (MSN)	<input type="radio"/> Off <input checked="" type="radio"/> On
Parallel Dial	<input checked="" type="radio"/> Off <input type="radio"/> On
Send Own Numbers	<input type="radio"/> Off <input checked="" type="radio"/> On
Sending Complete	<input type="radio"/> Off <input checked="" type="radio"/> On
<input type="button" value="Previous Menu"/>	

### Advanced ISDN-PRI Settings

Advanced ISDN-PRI Settings	
NSF Code Video Call	<input type="text" value="1"/>
NSF Code Telephone Call	<input type="text" value="1"/>
<input type="button" value="Previous Menu"/>	

NSF - Non Standard Facility. Your network provider may require a service selection in your ISDN configuration. Enter the Service code here.

Valid NSF service codes are from 1 to 31. Enter 0 to disable NSF service codes.

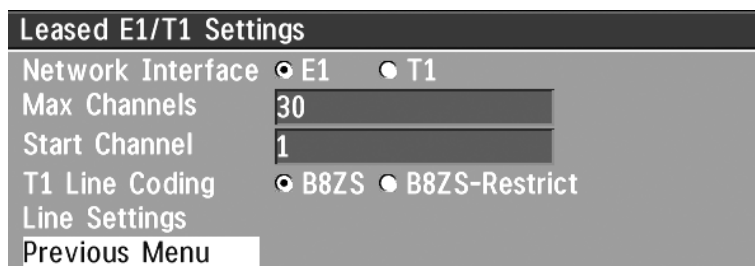
*EXAMPLE:*

AT&T OFFERS SEVERAL DIGITAL SWITCHED SERVICES. THESE INCLUDE SDN WITH SERVICE CODE 1 AND ACCUNET WITH SERVICE CODE 6.

*Example:*  
 Below is a list of common service profiles. As these profiles may change, contact your service provider to get the correct profile.

<u>Service profiles for AT&amp;T:</u>		<u>Service profiles for Sprint:</u>		<u>Service profiles for MCI:</u>	
NSF Service		NSF Service		NSF Service	
Disable	0	Reserved	0	VNET/Vision	1
SDN (including GSDN)	1	Private	1	800	2
Megacom 800	2	Inwatts	2	PRISM1, PRISMII, WATS	3
Megacom	3	Outwatts	3	900	4
Accunet	6	FX	4	DAL	5
Long Distance	7	TieTrunk	5		
International 800	8				
MultiQuest	16				
Call Redirection Service	23				

**Leased E1/T1 Settings**



**Network Interface**

Indicates if the network is of type E1 (30 channels) or T1 (24 channels). E1 will be default for PAL versions, T1 default for NTSC versions.

**Max Channels**

Indicates the maximum number of channels the codec is allowed to use on the E1/T1 interface. When E1 is selected, maximum is 30 channels. When T1 is selected, maximum is 24 channels.

**Start Channel**

Indicates the first E1/T1 channel the codec is allowed to use. This setting might be used if the E1/T1 line is shared with other equipment.

**T1 Line Coding**

Indicates how the signals on the line should be coded. If parts of the line between the systems use restricted coding, this should be selected,

**NOTE** ALL SETTINGS MUST BE IDENTICAL ON BOTH SIDES OF THE LEASED E1/T1 CONNECTION.

**Line Settings**

This is the same menu as for ISDN-PRI. Please refer to section '**ISDN-PRI SETTINGS**'.

## External network settings

External Network Settings	
Call Control	<input checked="" type="radio"/> RS366 Dialing <input type="radio"/> Leased Line <input type="radio"/> Data Triggered <input type="radio"/> Manual
Network Clocking	<input checked="" type="radio"/> RS449/V35 Compatible <input type="radio"/> X21 Compatible
<a href="#">Previous Menu</a>	

**NOTE** THE PHYSICAL INTERFACE ON EXTERNAL NETWORKS IS ONE NON-STANDARD 26 PIN CONNECTOR. SPECIAL CABLES ARE REQUIRED.

Before using the system together with external network equipment, you must specify the network parameters on this page.

**NOTE** THE SYSTEM HAS SUPPORT FOR UP TO 768KBPS/2MBPS USING THE EXTERNAL NETWORK (RS449/V.35/X.21) INTERFACE.

### Call control

'**RS366 Dialing**' is the only dialing protocol and would normally be used together with network clocking '**RS449/V35 Compatible**' when the external equipment uses RS366 ports.

'**Leased Line**' is a non-dialing protocol and should be used when two codecs are connected in a point to point connection. Use '**Leased Line**' when the handshaking signals DTR and CD are available. DTR and CD correspond to the X.21 network's C and I signals.

'**Data Triggered**' mode uses TxData (transmit data), RxData (receive data) and clock signals only. Use '**Data Triggered**' when no handshake signals are available.

'**Manual**' should be used when no handshake signals are available, and the external equipment requires a constantly connected line.

**TIP** TO MAKE AN IP CALL WHEN 'LEASED LINE' IS SELECTED, ENTER A NUMBER BEFORE PRESSING CONNECT TO ACTIVATE THE DIAL MENU.

### Network clocking

The network clock setting specifies the number of physical external clock signals.

Use **'RS449/V35 Compatible'** when the external equipment provides two clock signals, one for transmit and one for receive. The difference between RS449 and V35 is the cable only.

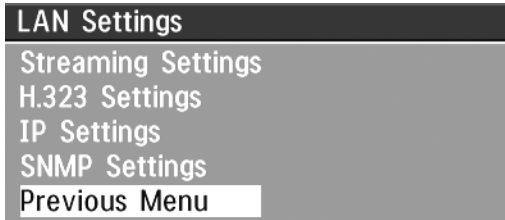
Use **'X21 Compatible'** when the external equipment provides a common clock signal for both transmit and receive.

### Cable Specification, V.35

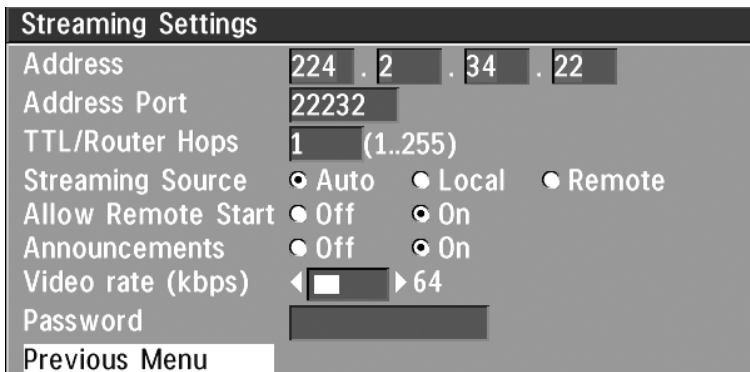
<b>V.35/RS-366 cable</b>				
<b>Signal Name</b>	<b>Female 26pin DSUB Pin number</b>	<b>Male 34pin Winchester Pin number</b>	<b>Male 25pin DSUB</b>	<b>Comments</b>
Frame ground	1	A		
Signal ground	19,23	B		
TX(A), transmit data	11	P		Twisted pair
TX(B)	12	S		
RX(A), receive data	13	R		Twisted pair
RX(B)	14	T		
RCLK(A), rcv clock	15	V		Twisted pair
RCLK(B)	16	X		
TCLK(A), xmt clock	17	Y		Twisted pair
TCLK(B)	18	AA		
DTR	26	H, C		
RI	24	L, J		
RLSD	22	F		
RS366 DPR	2		2	
RS366 ACR	3		3	
RS366 CRQ	4		4	
RS366 PND	5		5	
RS366 DLO	6		22	
RS366 NB1	7		14	
RS366 NB2	8		15	
RS366 NB4	9		16	
RS366 NB8	10		17	
RS366 GND	19		7	
Cable Marking	NET	DSU V.35	DSU RS366	



## LAN Settings



### Streaming\*



**NOTE** WHEN STREAMING, A MULTISITE OR A DUO VIDEO CALL CAN NOT BE MADE.

**NOTE** AN ON-SCREEN INDICATOR IS SHOWN WHEN STREAMING IS ACTIVE.



#### Address

Address is defined as the IP-address of a streaming client, streaming server or a multicast address. Giving an address in the range 224.0.0.1-239.255.255.255 will broadcast the stream to any host that has joined the specified multicast group. Specifying normal broadcast address 255.255.255.255 will broadcast to any members on the LAN.

#### Address Port

If several codecs are streaming to the same IP-address, different ports have to be used in order for the client to know which stream to receive. If the first codec streams on port 2240 and the second codec on port 2250, the client has to specify which port to listen to. Video is transmitted on the specified port, audio is transmitted on the port number 4 above the specified video port, in this case 2244 and 2254.

#### TTL/Router Hops

This is used for streaming data to limit how many routers the data should pass before it is rejected. If TTL is set to two, data will not traverse more than 2 router hops.

\* PLEASE CONTACT YOUR TANDBERG REPRESENTATIVE FOR FURTHER INFORMATION.

**Streaming Source**

- AUTO** Enables streaming of both local and far end video. Selection of which site to be streamed is done using voice switching (the site that speaks is streamed).
- LOCAL** Only the local video will be streamed.
- REMOTE** Only the far end video will be streamed.

Local and far end audio is always streamed.

**Allow Remote Start**

- ON** Streaming can be started from external user interfaces like the Web-browser or Telnet session.
- OFF** Streaming can only be started from the Videoconferencing System using the remote control, or by using the Dataport. This will prevent activation of streaming using Web browser or Telnet sessions. See also 'Password' section below

**Announcements**

- ON** The codec will announce to the network that it is streaming. This enables a streaming client (e.g. a PC) to connect to the codec's streaming session. Used by Cisco IP/TV.
- OFF** No announcement packets will be transmitted.

**Video Rate**

Defines the Video streaming rate from the system. Range is 16kbps - 320kbps. In addition, audio (G.711) streaming rate is 64kbps, providing a maximum streaming rate of 384kbps.

**Password**

Set password so that only participants entering correct password will be able to view the streaming session. Entering a password will prevent unauthorized people from accessing the streaming session.

**Start/Stop Streaming**

By pressing the **QUICK KEY** labeled '**Start Streaming**', the Streaming session will start. To stop the stream, press the same **QUICK KEY**, which will be labeled '**Stop Streaming**' while the streaming-session is active. Pressing **DISCONNECT** will also stop the streaming session.

**How to view streaming**

After streaming is started, an easy way to view the streamed audio/video is to start your Web-browser and enter the IP-address of the streaming system. After the Web page of the codec is shown, click on 'Streaming'. Alternatively, enter `http://<codec ip-address>/stream.sdp`.

## H.323 Settings

H.323 Settings	
E.164 Alias	9151
Use Gatekeeper	<input type="radio"/> Auto <input checked="" type="radio"/> Manual <input type="radio"/> Off
Gatekeeper IP	10 . 0 . 0 . 30
H.323 Prefix	9
Advanced H.323 Settings	
Previous Menu	
Registered to gatekeeper. 10.0.0.30:1719	
<input type="button" value="Register"/> <input type="button" value="Back"/>	

### E.164 alias

This is the E.164 address of the codec. The E.164 address is equivalent to a telephone number, sometimes combined with access codes. Valid characters are 0-9,\* and #.

When using a gatekeeper the codec will send a message to the gatekeeper containing both the E.164 address and the system name of the codec. The codec will not register with the gatekeeper if the E.164 alias is not set.

### Use Gatekeeper

- AUTO** The codec will automatically try to register on any available gatekeeper. If a gatekeeper responds to the request sent from the codec within 30 seconds this specific gatekeeper will be used. If no gatekeeper responds, the codec will not use a gatekeeper for making H.323 calls and hence an IP-address must be specified manually.
- MANUAL** The codec will use a specific gatekeeper identified by '**Gatekeeper IP-address**'.
- OFF** The codec will not use a gatekeeper and an IP-address must be used in order to make an H.323 call.

### Gatekeeper IP-address

This is the gatekeeper IP-address if you specify '**Use Gatekeeper: Manual**'.

### H.323 Prefix

When dialing a number prefixed with digits specified by '**H.323 Prefix**', and with '**Net: Auto**', an H.323 call will be placed.

*EXAMPLE:* H.323 PREFIX IS '555'. DIALLING '55582' WITH 'NET:AUTO' WILL SELECT LAN.

### Register

Pressing '**Register**' will send a gatekeeper registration request. This request will also be sent when leaving the menu.

## Advanced H.323 Settings

Advanced H.323 Settings	
RSVP	<input type="radio"/> Off <input checked="" type="radio"/> Auto
NAT	<input checked="" type="radio"/> Off <input type="radio"/> On
NAT Address	127 . 0 . 0 . 1
QoS Type	<input type="radio"/> Off <input type="radio"/> Diffserv <input checked="" type="radio"/> IP Precedence
IP Precedence	
Diffserv	
Previous Menu	

**NOTE** THESE SETTINGS ONLY HAVE AN EFFECT IF THEY ARE SUPPORTED BY YOUR IP INFRA STRUCTURE.

### RSVP (Resource Reservation Protocol)

- AUTO** RSVP enables the endpoints to request the optimal amount of bandwidth for the duration of an IP video conference.
- OFF** RSVP is switched off.

### NAT (Network Address Translation)

NAT is used in small LAN's, often home offices, when a PC and a videoconferencing system is connected to a router with NAT support. NAT support in the videoconferencing system enables proper exchange of audio/video data when connected to an external videoconferencing system (when the IP traffic goes through an NAT router).

When NAT is '**On**', the NAT Server Address will be shown in the startup-menu: 'My IP Address: 10.0.2.1 (NAT)'

### NAT Address

This must be the external/global IP-address to the Router with NAT support. Packets sent to the Router will then be routed to the codec.

In the router, the following ports must be routed to the codec's IP-address:

- Port 1720
- Port 5555-5560
- Port 2326-2365

Please contact your TANDBERG representative for further information.

### QoS Type

- OFF** No QoS is used
- DIFFSERV** Diffserv QoS method is used. Please see below for details.
- IP PRECEDENCE** IP Precedence QoS method is used. Please see below for details.

**IP Precedence**

Used to define which priority audio, video, data and signalling should have in the network. The higher the number, the higher the priority. The priority ranges from 0(off) - 7 for each type of packets.

IP Precedence	
Audio	◀ <input type="text" value="0"/> ▶ Auto
Video	◀ <input type="text" value="0"/> ▶ Auto
Data	◀ <input type="text" value="0"/> ▶ Auto
Signaling	◀ <input type="text" value="0"/> ▶ Auto
IP Type of Service (TOS)	
	<input type="radio"/> Delay <input type="radio"/> Throughput <input checked="" type="radio"/> Off <input type="radio"/> Reliability <input type="radio"/> Cost
<a href="#">Previous Menu</a>	

<b>NOTE</b>	<b>AUTO WILL PROVIDE THE FOLLOWING PRIORITY:</b>
	AUDIO                      4
	VIDEO                      4
	DATA                        3
	SIGNALING                6

**IP Type of Service (TOS)**

Helps a router select a routing path when multiple paths are available.

- DELAY**                      Tells the router to minimize the delay
- THROUGHPUT**            Tells the router to maximize the throughput
- RELIABILITY**            Tells the router to maximize the reliability
- COST**                      Tells the router to minimize the cost

**Diffserv**

Used to define which priority Audio, Video, Data and Signaling packets should have in an IP network. The priority ranges from 0 to 63 for each type of packets.

Diffserv	
Audio	<input type="text" value="0"/> (0..63)
Video	<input type="text" value="0"/> (0..63)
Data	<input type="text" value="0"/> (0..63)
Signaling	<input type="text" value="0"/> (0..63)
<a href="#">Previous Menu</a>	

## IP Settings

IP Settings				
IP-assignment	<input type="radio"/> DHCP		<input checked="" type="radio"/> Static	
IP-address	10	. 0	. 5	. 151
IP-subnet mask	255	. 255	. 0	. 0
Gateway	10	. 0	. 0	. 1
Ethernet Speed	<input type="radio"/> 10/Half <input type="radio"/> 10/Full <input type="radio"/> 100/Half <input type="radio"/> 100/Full <input checked="" type="radio"/> Auto			
Previous Menu				

**NOTE** CHANGES IN THIS MENU WILL NOT HAVE ANY EFFECT BEFORE THE SYSTEM IS RESTARTED.

### IP-assignment

DHCP (Dynamic Host Configuration Protocol) can be selected when a DHCP server is present.

- DHCP** IP-address, IP-subnet mask and Gateway are not used because these parameters are assigned by the DHCP server.
- STATIC** The codec's IP-address and IP-subnet mask must be specified in the IP-address field.

### IP-address

IP-address defines the network address of the codec. This address is only used in static mode. In DHCP-mode, the assigned IP-address can be found on the Welcome Menu.

### IP-subnet mask

IP-subnet mask defines the type of network. This address is only used in static mode. Your LAN-administrator will provide the correct value for this field.

### Gateway

When using DHCP, the default gateway will be set automatically. If the LAN utilizes static IP addresses, IP address, subnet mask, and default gateway must be specified by the LAN administrator.

### Ethernet Speed

- AUTO** The codec will auto-detect the speed/duplex on the LAN.
- 10/HALF** The codec will connect to the LAN using 10Mbps speed/Half Duplex.
- 10/FULL** 10 Mbps speed/Full Duplex.
- 100/HALF** 100 Mbps speed/Half Duplex.
- 100/FULL** 100 Mbps speed/Full Duplex.

### Restart

Pressing the **QUICK KEY 'Restart'** will restart your system without having to use the On/Off switch on the codec. If IP-assignment is changed, it is sufficient to use this **QUICK KEY** to restart the system.

### SNMP Settings

SNMP Settings				
SNMP Trap Host	10	. 0	. 5	. 100
SNMP Trap Host	127	. 0	. 0	. 1
SNMP Trap Host	127	. 0	. 0	. 1
SNMP Community				
Previous Menu				

#### SNMP Trap Host

SNMP (Simple Network Management Protocol) is used for monitoring and configuring of different units in a network. The codec's **SNMP Agent** responds to requests from **SNMP Managers** (a PC program etc.). **SNMP traps** are generated by the agent to inform the manager about important events.

**SNMP Trap Host** identifies the IP-address of the SNMP manager.

Traps can be sent to multiple SNMP Trap Hosts. Enter the IP address of up to three SNMP managers. All traps will then be sent to the hosts listed.

#### SNMP Community

SNMP Community names are used to authenticate of SNMP requests. SNMP requests must have a 'password' in order to receive a response from the SNMP agent in the codec.

**NOTE** THE SNMP COMMUNITY NAME IS CASE SENSITIVE.

## Call Settings

Call Settings		
Incoming MCU Calls	<input type="radio"/> Off	<input checked="" type="radio"/> On
Incoming Telephone Calls	<input type="radio"/> Off	<input checked="" type="radio"/> On
Fallback to Telephony	<input type="radio"/> Off	<input checked="" type="radio"/> On
Access Code	<input checked="" type="radio"/> Off	<input type="radio"/> On
Encryption	<input type="radio"/> Off	<input checked="" type="radio"/> Auto
Encryption Mode	<input checked="" type="radio"/> Auto	<input type="radio"/> AES <input type="radio"/> DES
Max Call Length (min, 0=Off)	0	
Network Profiles		
Previous Menu		

#### Incoming MCU calls

- ON** When you are in a call, the system will provide a visual/audio indication of an incoming call and ask you to accept/reject the call.
- OFF** The system will not accept incoming calls when you are in a call.

**Incoming telephone calls**

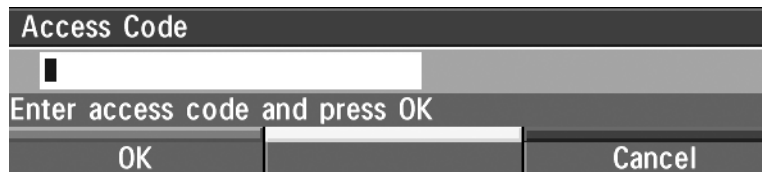
- ON** The system will accept incoming telephone calls.
- OFF** The system will not accept incoming telephone calls. This is useful to prevent incoming calls from systems other than videoconferencing systems.

**Fallback to telephony**

- ON** Enables fallback from video calls to telephony/speech calls.
- OFF** Disables fallback.

**Access Code**

- ON** When pressing **CONNECT** or any number to make a call, an **'Access Code'** menu will be shown. The user will then have to enter the correct Access Code in order to make a call.
- OFF** No Access Code is necessary to make a call.

**Encryption (Secure Conference)**

- AUTO** The system will try to set up calls using encryption.

Point to point calls: If the far end system supports encryption, the call will be encrypted. If not, the call will proceed without encryption.

MultiSite<sup>TF</sup> calls: In order to have encrypted MultiSite<sup>TF</sup> calls, all sites must support encryption. The padlock symbol will indicate encryption mode (AES or DES). If there is a mix of AES and DES encryption, only the symbol for DES encryption (single padlock) will be displayed.

IP MultiSite<sup>TF</sup> calls: Sites supporting encryption will be encrypted and sites not supporting encryption will not be encrypted. The padlock symbol will be shown on the MultiSite<sup>TF</sup> if all sites support encryption. The padlock symbol will be shown on the site connected to the MultiSite<sup>TF</sup> if this connection to the MultiSite<sup>TF</sup> is encrypted.

If the far end supports encryption, the systems will initiate encryption after the call is connected (an 'open padlock' symbol will be displayed). When encryption has been established, a 'closed padlock' symbol will be displayed.

- OFF** The system will not send or receive encrypted data.

Technical encryption information like encryption algorithm and encryption check code can be found in the 'Call Status' menu.



### Encryption Mode

- AUTO** The system will try to use the most secure encryption - AES, dependent on the capabilities of the other sites. If AES encryption is not supported by all the other sites, DES encryption will be tried.
- AES\*** The system will try to use AES with 128 bits encryption when setting up calls. If AES is not supported by the other site(s), no other type of encryption will be initiated.
- DES** The system will always try to set up the call using DES with 56 bits encryption on ISDN and IP. If DES is not supported by all other sites, no other type of encryption will be initiated.

**TIP** BOTH AES AND DES ENCRYPTION IS SUPPORTED FOR MIXED ISDN/IP CALLS. IN ADDITION AES -AND DES ENCRYPTED SITES CAN BE CONNECTED AT THE SAME TIME.

**TIP** THE MULTISITE CAN RUN 4 ENCRYPTED SITES AT 128 KBPS AND 3 ENCRYPTED SITES AT 256KBPS.

### Max Call Length

This feature will automatically end both incoming and outgoing calls when the call time exceeds the specified 'Max Call Length'.

'Max Call Length' can have the following values: 0-999 (minutes), where 0 is 'Off'.

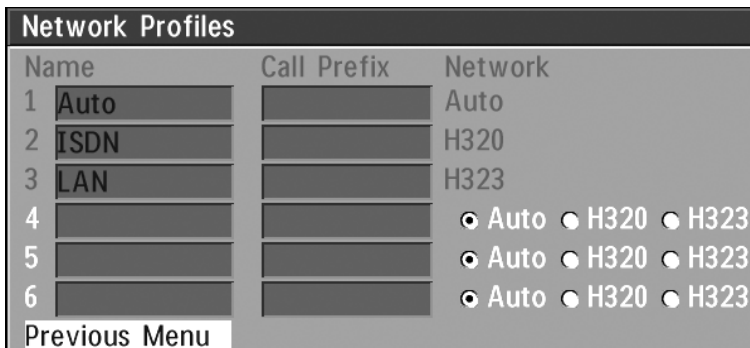
A few minutes before the specified time is reached, a **QUICK KEY** menu will appear. Users will be asked if he/she wants to extend the 'Max Call Length' that is specified:



### Network Profiles

This menu defines the settings listed when pressing the **QUICK KEY 'Net:'** while in the 'Dial' menu.

This menu consists of 6 network profiles, a prefix can be added for each profile. If you add a prefix to a profile, this prefix can be automatically added to the number being dialed.



**TIP** EXAMPLE:  
0 IS ADDED AS A CALL PREFIX TO THE 2ND PROFILE, ISDN. IF YOU ENTER 12345678 IN THE DIAL MENU AND SELECT 'ISDN', THE NUMBER DIALED WILL BE 012345678.

Using the three last profiles you can enter the name of a profile, prefix and network selection. This is useful if you have a fixed prefix for your service provider.

## Dataport configuration

The system provides two standard RS232 serial ports to allow a computer to be connected for data transfer and control purposes.

**NOTE** WHEN CONNECTING TO A PC THE CONNECTING CABLE *MUST* BE A STRAIGHT THROUGH RS232 CABLE.

### Dataport 1

If you wish to connect a PC to Dataport 1, you must ensure that the PC and the system are identically configured. The available settings are:

Data Port 1	
Baudrate	<input type="radio"/> 1200 <input type="radio"/> 2400 <input checked="" type="radio"/> 4800 <input type="radio"/> 9600 <input type="radio"/> 19200 <input type="radio"/> 38400
Parity	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even
Datubits	<input type="radio"/> 7 <input checked="" type="radio"/> 8
Stopbits	<input checked="" type="radio"/> 1 <input type="radio"/> 2
Mode	<input type="radio"/> Data <input checked="" type="radio"/> Control <input type="radio"/> Modem <input type="radio"/> T120
Data Port 2	
Previous Menu	

Dataport 1 supports 4 different modes:

#### Data

Provides a transparent data channel. This channel can be used for many different purposes such as file transfer, application sharing and more. When using this mode, it is necessary to have a TANDBERG system at the far end.

#### Control

The control interface provided by the Dataport supports a subset of the Hayes command set as well as a comprehensive set of system specific commands.

This mode maintains communication with the Dataport's command interpreter at all times. All features available from the hand-held remote control can be accessed through the dataport.

#### Modem

Allows you to control the system externally via a PC as in Control Mode. Once a call is established, Dataport 1 will automatically switch to Data mode. When the call disconnects, Dataport 1 switches back to Control Mode.

#### T.120

Provides a data channel supporting the T.120 standard for data communication. Using T.120 software on your PC, you can communicate with other T.120 systems using your PC and your system.

## Dataport 2

Dataport 2 is dedicated to the main camera and will not be available in standard configuration.

Data Port 2	
Baudrate	<input type="radio"/> 1200 <input type="radio"/> 2400 <input type="radio"/> 4800 <input checked="" type="radio"/> 9600 <input type="radio"/> 19200 <input type="radio"/> 38400
Parity	<input checked="" type="radio"/> None <input type="radio"/> Odd <input type="radio"/> Even
Databits	<input type="radio"/> 7 <input checked="" type="radio"/> 8
Stopbits	<input checked="" type="radio"/> 1 <input type="radio"/> 2
Mode	<input type="radio"/> VISCA <input checked="" type="radio"/> Auto
Previous Menu	

The codec will automatically detect W.A.V.E II cameras. If you are using a camera supporting the VISCA protocol, select '**Mode: VISCA**'. The Dataport 2 settings will then be enabled.

For more details on connecting to the Dataport, see 'Peripheral Equipment'.

## Language

Language	
Language	<input checked="" type="radio"/> English <input type="radio"/> Deutsch <input type="radio"/> Français <input type="radio"/> Italiano <input type="radio"/> Norsk <input type="radio"/> Svenska <input type="radio"/> Español <input type="radio"/> Português <input type="radio"/> Chinese <input type="radio"/> Japanese
Previous Menu	

The system supports 10 different languages for its on-screen menus.

Select the preferred language, and then press **OK** to save.

## Software Options

All Director systems have Security (contains Secure Conference AES), Natural Presenter Package<sup>TF</sup>, and MultiSite<sup>TF</sup> options enabled.

All TANDBERG systems require a valid option key to activate the various options. A restart of the system is required after entering a new option key. If the option key is invalid, the original key will be used.

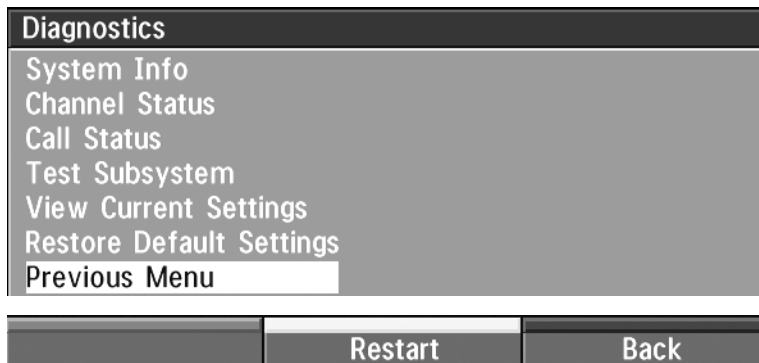
Software Options	
Options installed:	MultiSite, Presenter
Hardware Serial No	00470223
Current Option Key	<input type="text" value="KLOZRHD"/>
New Option Key	<input type="text"/>
Previous Menu	

### The following options are available

1. No option
2. NPP (Presenter)
3. MultiSite + NPP
4. Security + NPP
5. Security + NPP + MS

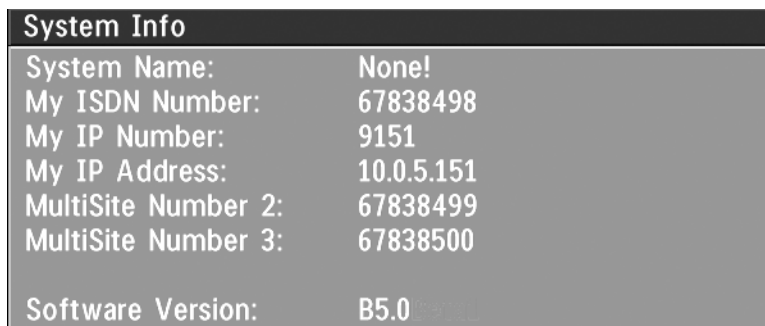
## Diagnostics

Allows testing of individual system components and displays the current system settings.



### System info

Select '**System Info**' to view system numbers, line status, software version and other useful information.



### Channel status

Comprehensive information about the call progress is available through the Channel Status window. This window indicates the various stages each B-channel goes through whilst establishing a connection.

Status - BRI	Comments
Idle	the channel is idle
Calling	when calling — the network has acknowledged the call
Connected	when connection is established
Sync	when the channels are synchronized
Active	when all available channels are connected
Releasing	waiting for the network to confirm a release of the call
Released	when disconnected - the network has acknowledged the disconnection

Channel Status		
	Idle.	
1	B1 Disconnected 6641 16	
	B2 Disconnected 6641 16	
2	B1 Idle	
	B2 Idle	
3	B1 Idle	
	B2 Idle	
4	B1 Idle	
	B2 Idle	
5	B1 Disconnected 6641 16	
	B2 Disconnected 6641 16	↓

The numbers used to call out to the far end are shown in the window. If an error occurs a cause code will be displayed on the right hand side of the window.

**TIP** PRESS **MENU** AND THEN '**CALL STATUS**' TO BRING THIS MENU UP WHEN NOT IN THE MENU SYSTEM.

**Cause codes**

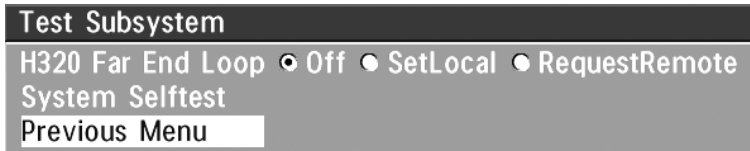
The most common cause codes (for ISDN) are:

- 1 - Unallocated (unassigned) number
- 2 - No route to specified transit network (WAN)
- 16 - Normal clearing
- 17 - User busy
- 18 - No user responding
- 21 - Call rejected
- 28 - Invalid number format (incomplete number)
- 29 - Facility rejected
- 31 - Normal, unspecified
- 34 - No circuit/channel available
- 41 - Temporary failure
- 58 - Bearer capability not presently available
- 65 - Bearer service not implemented
- 69 - Requested facility not implemented
- 81 - Invalid call reference value
- 88 - Incompatible destination
- 100 - Invalid information element contents
- 102 - Recovery on timer expiry
- 127 - Internetworking, unspecified
- 255 - TANDBERG specific. undefined cause code

**Call status**

Comprehensive information about the call is available through the '**Call Status**' window. The menu has two columns, one for transmitted and one for received audio/video/data information. If Duo Video<sup>TF</sup> or MultiSite<sup>TF</sup> is used, pressing the **LEFT/RIGHT KEYS** will show one page per connected site. Some of the information fields will vary dependent on if H.320 (ISDN calls) or H.323(IP calls) are made.

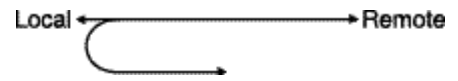
Calls: H320	Transmit	Receive
System Name: 8620		
Call rate (kbps)	384.0	384.0
Video protocol	H263+	Off
Audio protocol	G722	G722
Data protocol	None	None
Video format	CIF	None
Video rate (kbps)	325.6	0.0
Audio rate (kbps)	56.0	56.0
Data channel/rate	Off/0.0	Off/0.0
Encryption status	AES	AES
Encryption check code	5048 EB21	2B2C 1ABE



You can test the different subsystems of your videoconferencing equipment.

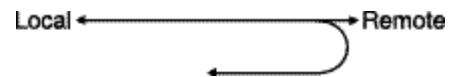
**Far End Loop (ISDN only)**

- SETLOCAL This system will loop all incoming audio and video.
  - The far end will see its own video and hear its own audio.
  - The local side will see and hear the far end.



An on-screen indicator will indicate 'Local Loop'.

- REQUESTREMOTE A request will be sent to set the far end in loop.
  - The far end will see and hear the local side (varies depending on implementation of loop functionality).
  - The local side will see its own video and hear its own audio (if the far end supports loop).

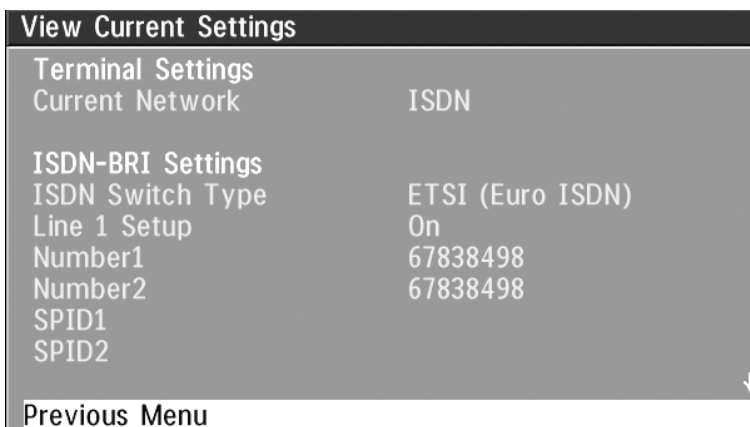


If 'Far End Loop' is set to 'RequestRemote' while in a call and the call is subsequently disconnected, 'Far End Loop' will be set to 'Off'.

**System Selftest**

The system performs a check to determine internal hardware integrity. Test Network is useful when you want to check if your network connection is active.

**View Current Settings**



This window will display all the system settings. Use the arrow key on the remote control to scroll through the list.

**Restore defaults**

You may restore all system settings to the factory default using this function.

**NOTE** THIS DEFAULT SETTING WILL NOT AFFECT YOUR CALL DIRECTORY INFORMATION, NETWORK TYPE, LINE SETUP NUMBERS OR YOUR SPID NUMBERS

# Appendices

**Appendix 1: Connecting the system to ISDN using NT1 network adapters**

**Appendix 2: Connecting the system to the Switched 56 network**

**Appendix 3: Connecting the system to PRI/T1**

**Appendix 4: Environmental considerations**

**Appendix 5: Using the file system**

**Appendix 6: Security**

**Appendix 7: 12" Touch Panel Interface**

## Appendix 1: Connecting to ISDN using network adapters

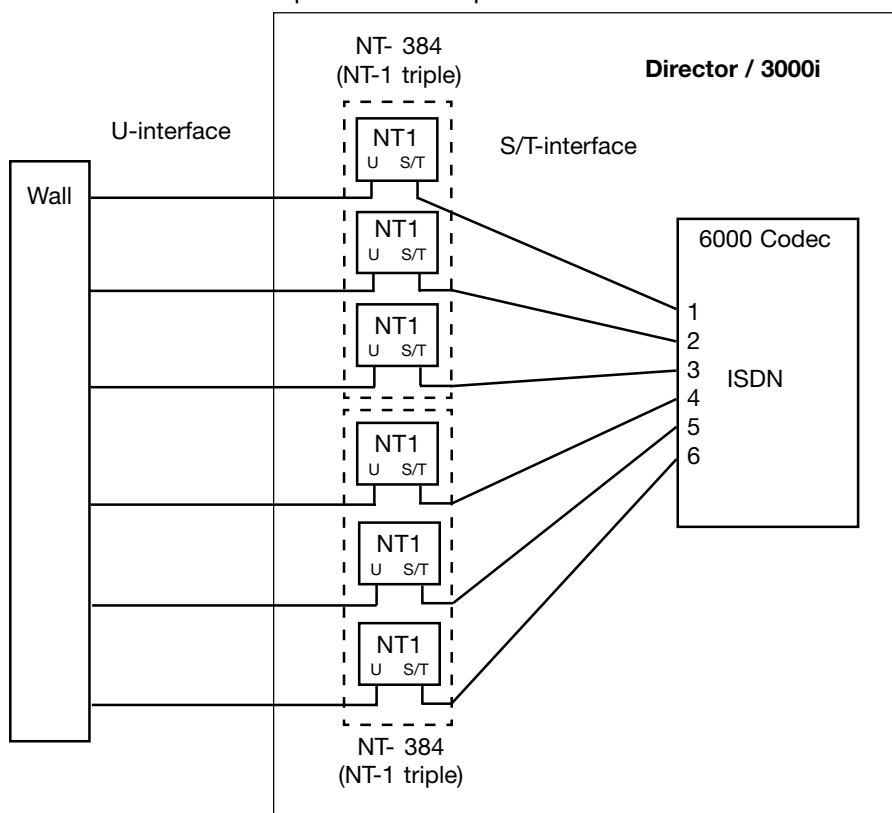
### Connecting

When network terminating units are required, Inter-Tel Inc. models NT1 or NT384 are installed within the enclosed area at the bottom of the cart, as illustrated below.

Connect the first ISDN cable from ISDN 1 on the codec to the S-interface on your first NT1 network adapter. Connect the other ISDN cables to the appropriate NT1 network adapters.

Connect the U-interface of your NT1 adapter to the line provided from your network provider. TANDBERG can provide NT-adapters.

For convenience the NT1 adapters could be placed inside the cabinet. If needed, use the shorter



ISDN cable (RJ45 connectors) delivered with the NT1 between the codec and the NT1 and the longer ISDN cable between the NT1 and the connector (RJ45) at the wall socket.

### Configuring

The configuration of the codec is performed in the same manner as described in ISDN BRI Settings.

The NT1 should be powered up and you should check that the network is active. Please check your NT1 User Manual.



## Appendix 2: Connecting to the Switched 56 network

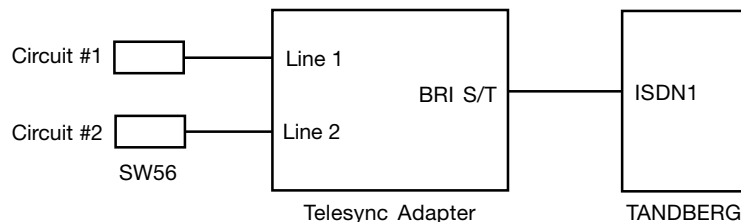
### Using Telesync TS-256 SW56/ISDN adapter

Connecting the system to the SW56 network using a Telesync Adapter is described below.

NOTE: There are different Telesync Adapters for different configurations of SW56 networks. The network types tested with the system are SW56 2Wire and 4Wire.

### Connecting

Connect the system ISDN1 cable to the BRI S/T interface on the Telesync Adapter. Connect the two SW56 cables from the Telesync adapter Line 1 and Line 2 to the SW56 network.



### Configuration of Telesync Adapter

No configuration of the Telesync Adapter is necessary.

### Configuration of the system

Select network type to 'National ISDN'.

#### LINE 1 SETUP

NUMBER1: program with number from the first SW56 line  
 NUMBER2: program with number from the second SW56 line  
 SPID1: program with number from the first SW56 line  
 SPID2: Leave blank

#### LINE 2 SETUP

NUMBER1: number from the third SW56 line  
 NUMBER2: number from the fourth SW56 line  
 SPID1: Leave blank  
 SPID2: Leave blank  
 And so on for the other lines.

### How to call

Important: Use the Quick key 'Set Restrict (56k)' in the Quality menu to specify a restricted call (56k) when you dial a number.

#### Set Restrict

EXAMPLE:

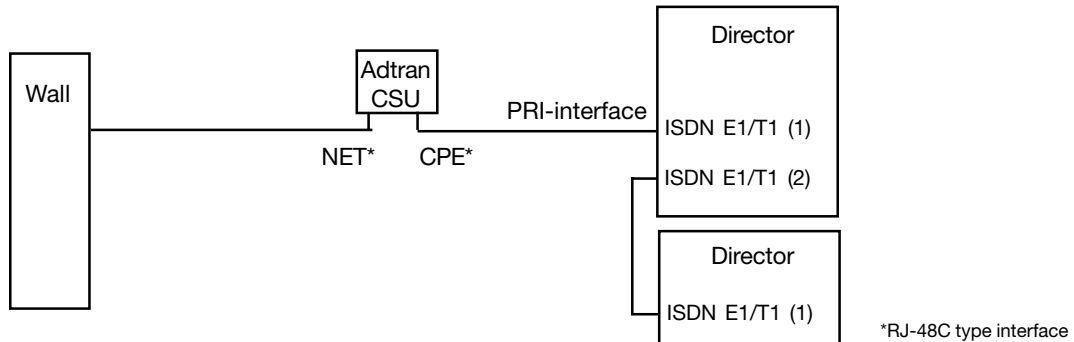
ONE NUMBER DIALING ENTER:	NUMBER:	1703111222	(56k)
TWO NUMBER DIALING ENTER:	NUMBER:	1703111222	(56k)
	2ND:	1703111223	

## Appendix 3: Connecting to PRI/T1

### Using CSU adapter

Connecting the system to the ISDN network via the E1/T1-interface using an Adtran T1 ESF CSU ACE will allow up to 1.54 Mbps transmission. The E1/T1-interface must be connected to a CSU approved according to IEC 60950, UL 1950 or equivalent standard.

**NOTE:** The PRI-line will run the AT&T 4ESS, 5ESS and National ISDN protocols in addition to Euro ISDN (E1).

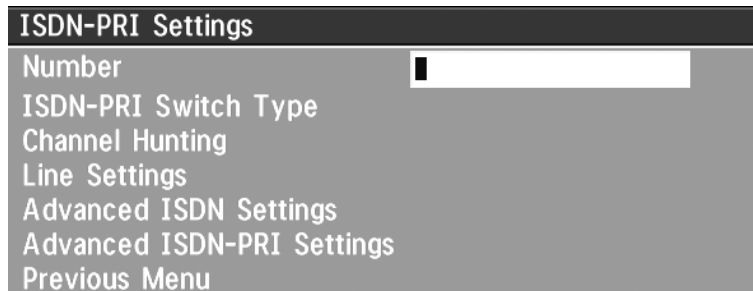


### Connecting to Adtran T1 ESF CSU ACE

Connect the PRI cable from the Codec to the input marked CPE on the Adtran CSU (straight through category 5 cable is recommended). Connect to the network via the NET connector on the Adtran CSU. When two Codecs are cascaded, connect the second Codec to the E1/T1 port 2 on the first Codec using a T1 crossover cable.

### Configuration of the system

Press **MENU** on the remote control. Select **'Terminal Settings'**, **'Network'**.



Select **'Current Network: PRI'** and specify your PRI number, max. channels, cable length (between Codec and CSU) and switch type:

**NOTE** CASCADED CONNECTION: REMEMBER TO PROGRAM NUMBERS AND MSN. OTHERWISE, THE FIRST CODEC WILL ANSWER ALL CALLS.

### Configuration of Adtran T1 ESF CSU ACE

Enter '2)CONFIG' menu using SCROLL and ENTER buttons.

- Enter '3)TERMINAL' menu. Check '1)FORMAT:ESF', '2)CODE: B8ZS', '3)SET LBO: 0-133' (Corresponding to 'Cable Length' setting on the Codec).
- Go to main menu and enter '1)NETWORK' menu. '7)SET LBO: 0.0 (According to information from Telco).
- Also, other network parameters should be set according to information from your Telco.

# Appendix 4: Environmental & operational considerations

## Guidelines for Optimal Videoconferencing Environments

The following are a set of guidelines to consider when either building a videoconferencing room, or using an existing room for videoconferencing.

### LIGHTING

- Low Contrast desired for light intensity.
- No dark spots.
- Intensity @ table 800 - 1400 Lux as measured with an Incident light meter.
- Intensity @ back wall: minimum ° of that measured at table, Max ∫ of that measured at table.
- Color temperature: Depends upon wall color and camera.
- Typically 3200 - 3600 degrees Kelvin
- Block sunlight from entering room.

### SEATING AREA (TABLE)

- Should allow all participants to see Monitors.
- Should allow camera to “see” all participants.
- Should allow participants to see each other.
- Should allow 3 linear feet for each participant.
- Non-shiny non-patterned preferably light grey surface (if table used).

### WALLS

- Color: Depends on participants skin tones, cameras, and lighting. Generally high contrast color desired . Light blue is commonly used.
- Acoustically reflective surfaces (such as glass or concrete) should be covered with curtains or sound treatment.

### AUDIO

- Noise Floor Maximum 50dBC.
- Noise Floor preferred less than 44dBC.
- Reverb Time .3 to .5 sec.
- Absorption Coefficient .25 to .45.
- No flutter echoes.

### VENTILATION

- Keep in mind Noise Floor.
- 300W (1024 BTU/HR) per person.
- 400W (1365 BTU/HR) for equipment.
- Intake and exhaust should be located near equipment.
- Velocity = Noise. Therefore keep velocity of air low.

### MONITOR SIZE

- Optimal distance from monitor for viewing people is about 7.5 x monitor size.
- Optimal distance from monitor for viewing documents is about 3.25 x monitor size.
- Viewing Angle: 45 degrees off axis maximum.

### ROOM

- Should be located away from noise
- Should not have windows
- Doors should be located off camera - A “diamond” shape gives best viewing angles, camera angles, and can seat the most people.

### LIGHTING

Type	Temp
Bright Daylight near equator	10 000K to 30 000K
Metal Halide Lamp	10 000K
Verilux Reptile Daylight	6 500K
Daylight White Fluorescent	6 300K
Verilux Full spectrum Fluor	6 280K
Verilux Reptile D-light	5 600K
Average Daylight	5 500K
Cool White	4 200K
Lite White	4 150K
3500K Fluorescent	3 500K
Warm White	3000-3200K
100W Light bulb	2 850K
Candlelight	1 900K

Source	Intensity
Sunlight	30 000 to 100 000Lux
TV Studio	2000Lux
Average office	400Lux
By my Computer	600Lux
Moonlight	1Lux

Note: As measured with an incident light meter.

### **Iris Control and Lighting**

By default the Director camera will use an automatic iris to compensate for changes in lighting. In addition to this feature you may further assist the Director to maintain the best possible image quality by paying special attention to environmental lighting and background colors as described below. Remember the Director will send live images of yourself *and* your immediate surroundings.

- Avoid direct sunlight on the subject matter i.e. yourself, the background or onto the camera lens as this will create harsh contrasts.
- If light levels are too low you may need to consider using artificial lighting. Again, avoid direct illumination of the subject matter and camera lens.
- When using artificial lighting, 'daylight' type lamps will produce the most effective results. Avoid colored lighting.
- Indirect light from shaded sources or reflected light from pale walls, often produces excellent results.
- Avoid harsh side lighting or strong light from above, for example: strong sunlight from a window or skylight, as this may put part or all of the subject matter in shadow or cause silhouetting.
- If you still have problems with the iris and lighting, manual adjustment of the camera parameters might help - see the 'Video Settings' menu:
- If a subject is backlit, e.g. a person in front of a window, it will appear dark. This can be corrected by switching on the backlight function (automatic on some cameras).
- Dim scenes can also be improved by manually adjusting the brightness.

### **Brightness Control**

For adjusting brightness, colors or other adjustments of the monitor, you must use the controls monitor's front panel. Adjust the monitor to suit the conditions of the room. More adjustments can be made using the on-screen menu. Refer to the monitor's user manual for more information.

### **Loudspeaker Volume**

The audio system uses the built-in high quality loudspeakers and amplifier specifically designed for this system. The volume of the audio system is controlled by the volume control keys on the HCS III remote control. The volume control on the monitor is not used.

### **Background**

The appearance of the picture background is very important but easily overlooked. It is important to remember that the camera also shows what's behind you when in a videoconference. To ensure a suitable background we recommend you consider the following:

- Use a neutral colored background with a medium contrast and a soft texture, e.g. a plain curtain with no heavy patterns or strong colors that may adversely tint the whole scene.
- Avoid moving backgrounds, for example: curtains in a draft, moving objects, or people walking behind you, as this may both reduce image quality and distract the attention of the calling party.
- Do not place the camera facing a doorway.

## Appendix 5: Using the file system

It is possible to access a file system within the TANDBERG system by using FTP:

```
DOS-window    ftp <IP-address of codec>
Web-browser   ftp:// <IP-address of codec>
```

### Description of the different files

all.prm	all settings in the system (including directory)
dir.prm	directory entries
event.log	logs fault situations etc.
sw.pkg	the system software
globdir.prm	file containing up to 400 entries. These entries can not be edited from the TANDBERG Videoconferencing system, but can be edited as a text-file.

### Description of the different folders

user	a folder to be used for custom logos etc.
remote	a folder used for software upgrade of the far end TANDBERG system

### What can be done by using the file system?

- software upgrade of the far end TANDBERG system (B3 or above) via ISDN
- upload of custom logos

### Software upgrade

- Connect to the system you want to upgrade using ISDN.
- Copy the software file to a folder on your harddisk.
- Open a DOS-window and go to this folder.
- Type ftp <IP-address of your local codec>.
- Enter password: <Release Key of far end system>
- Go to the remote folder, type "cd remote"
- Upload the software file, type put <s0xxxxxx.pkg>
- Wait until the following is shown:
 

```
226 Closing data connection.
5437569 bytes sent in 808.01 seconds (6.73 Kbytes/sec)
ftp>
```
- Restart the far end codec.

The far end system should now be upgraded. For further information, please contact your TANDBERG representative.

### Custom logos

- Go to the folder where your logo is located.
- Type ftp <IP-address of your local codec>.
- Go to the user folder, type "cd user"
- Upload the logo, type put <startup.jpg>

<b>NOTE</b>	LOGO MAX SIZE: E1: 704X480, B6: 320X200, FILE-FORMAT: JPG. IF THE FILE IS TOO LARGE, NO LOGO WILL BE DISPLAYED.
-------------	--

The new logo will be displayed the next time you restart your system.

## Appendix 6: Security

The TANDBERG Director Videoconferencing system has several features both to protect from unauthorized use and system access:

### Access Code

When 'Access Code' is enabled, the user will be asked to enter an access code before he/she is able to make a call.

The system will verify if the entered access code is valid by checking the code with the allowed codes listed in the 'access.txt' file on the ftp-server in the codec.

If no 'access.txt' file is uploaded to the codec, registration of the code will be done without validation. E.g. you can enter whatever code you want and have access to the system.

The 'access.txt' file is a plain text file with one line per access code as shown below:

```
1234
1250
A1
B2
ABC
```

To upload this file to the codec, follow these steps:

- Open a DOS-window and go to the folder where the 'access.txt' file is located.
- Type ftp <IP-address of your local codec>.
- 'User:', press Enter or enter IP-password.
- Type "bin" and press Enter
- Go to the user folder, type "cd user".
- Upload the 'access.txt' file, type 'put access.txt'.
- Exit from ftp, type 'bye'.

### Menu Password

Access to the menu system on the TANDBERG Videoconferencing unit can be controlled using password protection. This is done by using the following dataport command:

menupassword set <pin-code>. The pin-code should be maximum 5 - five digits. To erase the password, enter an empty pin-code.

### Streaming Password

By setting a streaming password in the streaming menu on the TANDBERG codec, a password have to be entered on the streaming client to be able to see the videostream from the TANDBERG Videoconferencing Unit.

### IP Password

By setting a IP Password on the TANDBERG codec, all access to the system using IP (Telnet, FTP, WEB) requires a password. This password can be enabled from telnet or dataport using the command: ippassword "<ip-password>".

To remove this password, use the command: ippassword "". From telnet, this is only possible by first entering the correct password.

### Services

The different IP services on the TANDBERG codec - FTP, Telnet, HTTP, SNMP and H.323 can be disabled to prevent access to the system. By using the commands below, the services can be independently enabled/disabled:

```
services <telnet/ftp/http/h323/remote-software> <enable/disable> .
```

In addition, the command 'services <snmp> <read-only/enable/disable>' will make it possible to read SNMP messages in addition to enable/disable SNMP.

### SNMP Security alert

This function will notify any Management Application (such as TMS - TANDBERG Management Suite) if anyone tries to perform Remote Management on the TANDBERG Codec using a illegal password. The Security alert that is sent to the Management Application will contain information about the IP address and the service (WEB, Telnet, FTP) being used for the attempt.

If TMS is used, email notifications or alarms about the attempt can be sent to specified persons.

### Encryption

All TANDBERG systems support both AES and DES encryption. By default this feature is enabled such that when connecting with any other video system or MCU, a TANDBERG system will attempt to establish a secure conference using AES or DES encryption. The TANDBERG system will attempt this for both IP and ISDN connections. Where a remote system or MCU supports encryption, the highest common encryption algorithm will be selected on a port by port basis.

The type and status of the encryption negotiated is indicated by padlock symbols and on-screen messages. Encryption on the TANDBERG systems is fully automatic, and provides clear security status indicators;

An open padlock indicates that encryption is being initialized, but the conference is not yet encrypted.

Single padlock indicates DES encryption.

Double padlock indicates AES encryption.

In addition to on-screen indicators the 'Call Status' menu provides two information fields regarding call encryption. The first field is the 'Encryption Code' which will identify either 'AES' or 'DES'. The second field is the 'Encryption Check Code' and is comprised of an alphanumeric string. This string will be the same for systems on either side of an encrypted conference. If the Check Codes do not match this would indicate that the call has been exposed to a 'Man In The Middle' attack.

When a TANDBERG codec with MultiSite functionality hosts a conference, the highest possible encryption algorithm will be negotiated on a site by site basis. MultiSite conferences can therefore support a mix of AES and DES encrypted endpoints in the same conference.

A conference will only be as secure as its 'weakest link'. Even though conference participants may have negotiated and be running AES encryption, if just one participant has negotiated DES encryption, the AES system will display the single padlock symbol to advise all users of the lowest encryption mechanism currently in effect.

All TANDBERG endpoint supporting DES encryption can upgrade to AES encryption by applying TANDBERG's AES Encryption option. Please contact your TANDBERG representative for more information.

The standards supporting the encryption mechanisms employed by TANDBERG are: AES, DES, H.233, H.234 and H.235 with extended Diffie Hellman key distribution via H.320, H.323 and Leased Line connections.

# Appendix 7: 12" Touch Panel Interface

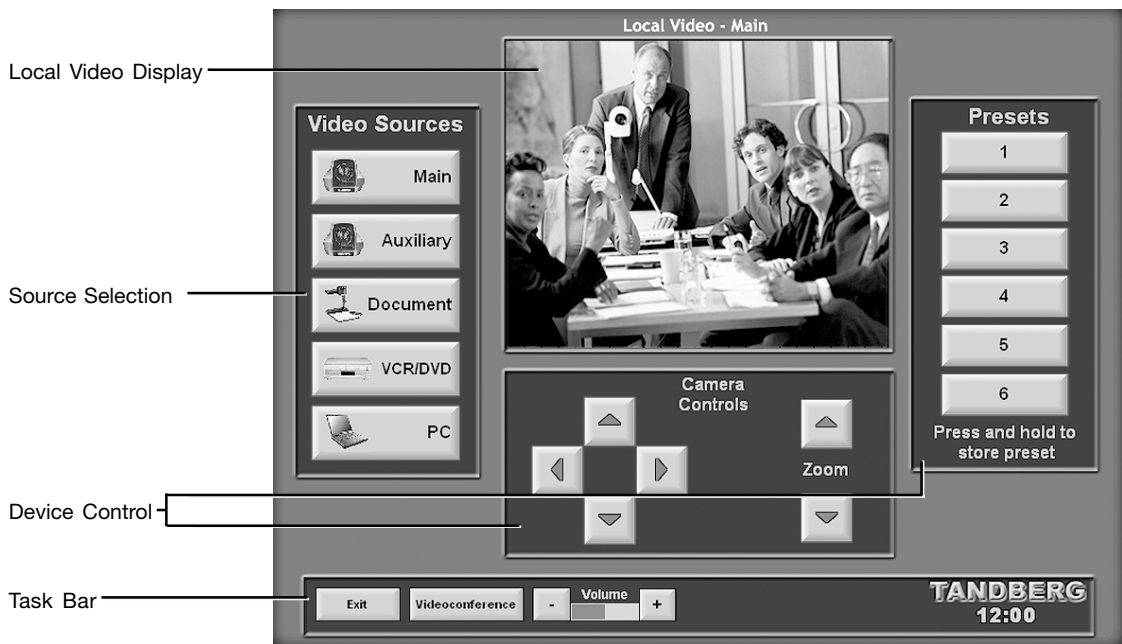
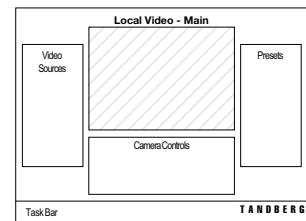
In addition to the touch screen controls, the TANDBERG Director Videoconferencing system may be controlled through an optional 12" touch panel interface. Placed on a podium or desktop, a videoconference presentation can be controlled away from the 3000i touch screen.



Videoconference operation and control will be very similar to the control interface found on the 3000i touch screen. Buttons and controls are intuitively laid out and labeled in the same way for both control interfaces so that placing videoconference calls and making presentations are simple and straight forward. You will find that the process for MAKING CALLS, MANUAL DIALING, DIRECTORY SETUP, DIRECTORY DIALING, DUOVIDEO™, AND MULTIPOINT are similar between both control interfaces. Please refer to the appropriate section in this manual for detailed information.

## Local Display Operation

When the system is not in a videoconference call, the default screen is the 'Local Video - Main'. This mode of operation can utilize the Director's audio and video functionality as a room presentation tool.



The screen has four sections:

- VIDEO DISPLAY WINDOW** where the chosen video source will be displayed.
- SOURCE SELECTION** where the available video sources can be selected.
- DEVICE CONTROL** where controls specific the chosen video source will be displayed. If the device has no associated controls this area will be blank.
- TASKBAR** where the functions relevant to the current system operation will be displayed.



## Source Selection

Press a **VIDEO SOURCE** button to show its image in the display window. The User can change the source selection at any time, the selected source button changes from blue to green when active. Any device controls associated with that source will be displayed in the **Video Display Window** after its selection.

### Video Sources



<b>MAIN</b>	Sends the Main source to the video display. If this source has either the TANDBERG WAVE or Sony EVI camera connected it can be controlled. See DEVICE CONTROL.
<b>AUXILIARY</b>	Sends the Aux source to the video display. If this source has either the TANDBERG WAVE or Sony EVI camera connected it can be controlled. See DEVICE CONTROL.
<b>DOCUMENT</b>	Sends the document camera to the video display. No device control are available for this source.
<b>VCR / DVD</b>	Sends the VCR or DVD to the video display. No device control are available for this source.
<b>PC</b>	Sends the PC to the video display. If the Director module is installed within the Rear Projection SMART Board 3000i and the PC is running the SMART Board software, annotation and PC operation will be possible.

## Device Control

The **Main** and **Aux** sources can be positioned manually using the camera control buttons or by using the presets.

	<p>Left and Right arrow buttons pan (move horizontally) the camera image.</p> <p>Up and Down arrow buttons tilt (move vertically) the camera image.</p> <p>Camera controls will be available for both Main and Aux sources</p>
	<p>Zooms in (enlarges the view of a participant). Zoom out (reduces the view of a participant).</p>
<p><b>Presets</b></p> <p>Press and hold to store preset</p>	<p>Moves and zooms either the Main or Aux camera to a predefined room view.</p> <p>To Store a preset: Move the camera to the view required.</p> <p>Press and hold the <b>PRESET</b> button you want to sent until the red "preset stored" text appears.</p>

## Taskbar

The grey TANDBERG **TASKBAR** present at the bottom of the screen provides controls relevant to local presentation operation. The buttons will change according to the display status. The button border and text will illuminate red when it is activated.

**NOTE** TASKBAR REFERENCES ARE FOR THE TANDBERG INTERFACE AND NOT PC OPERATING SYSTEM TASKBARS (I.E. MICROSOFT WINDOWS, MACINTOSH)



<b>EXIT</b>	EXIT from the local display operation to the Opening screen.
<b>VIDEOCONFERENCE</b>	Select this function to access the VIDEOCONFERENCE CALL CONTROLS and initiate a call.
<b>VOLUME</b>	Increases or decreases the local volume level within the room by using the plus or minus buttons. The level bar indicates the current level setting.

## Video Display Window

Shows the currently selected **VIDEO SOURCE**.

It is possible to enlarge certain video display windows by simply touching the video window itself.

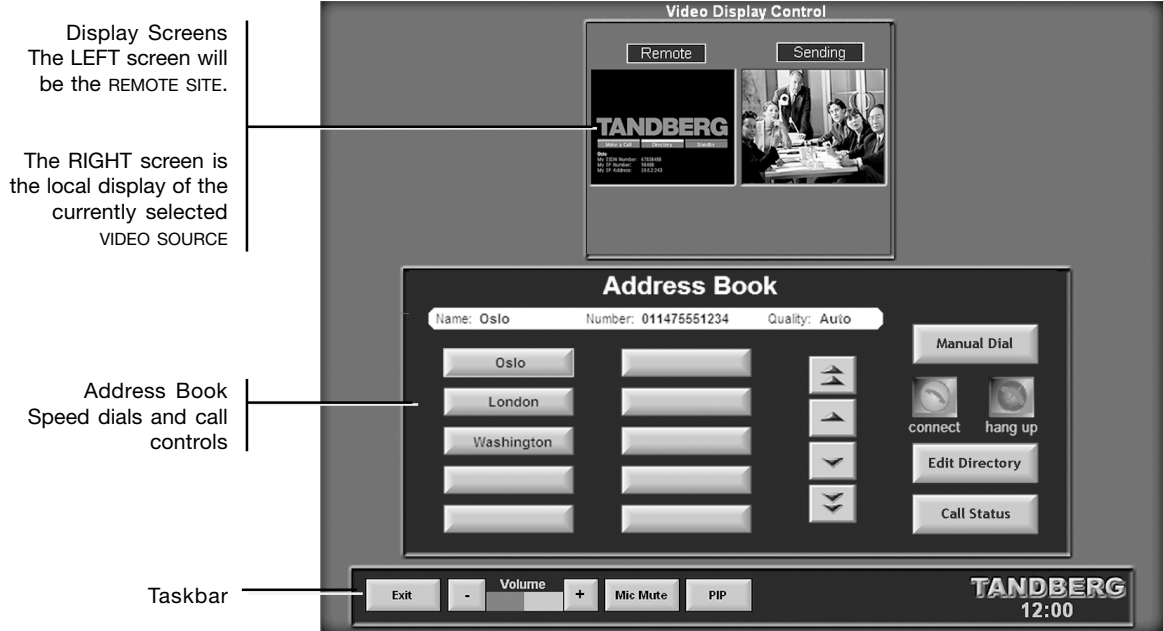
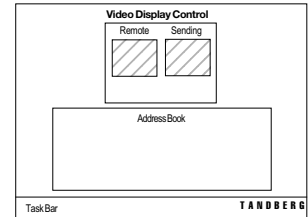
Touching the window again will return it to the previous size.

## Videoconference Operation

You will find that the process for MAKING CALLS, MANUAL DIALING, DIRECTORY SETUP, DIRECTORY DIALING, DUOVIDEO<sup>TF</sup>, AND MULTIPOINT are similar between the 3000i touch screen and the 12" touch panel control interface. Please refer to the appropriate section in this manual for detailed information.

### When the Director receives/initiates a video/audio call.

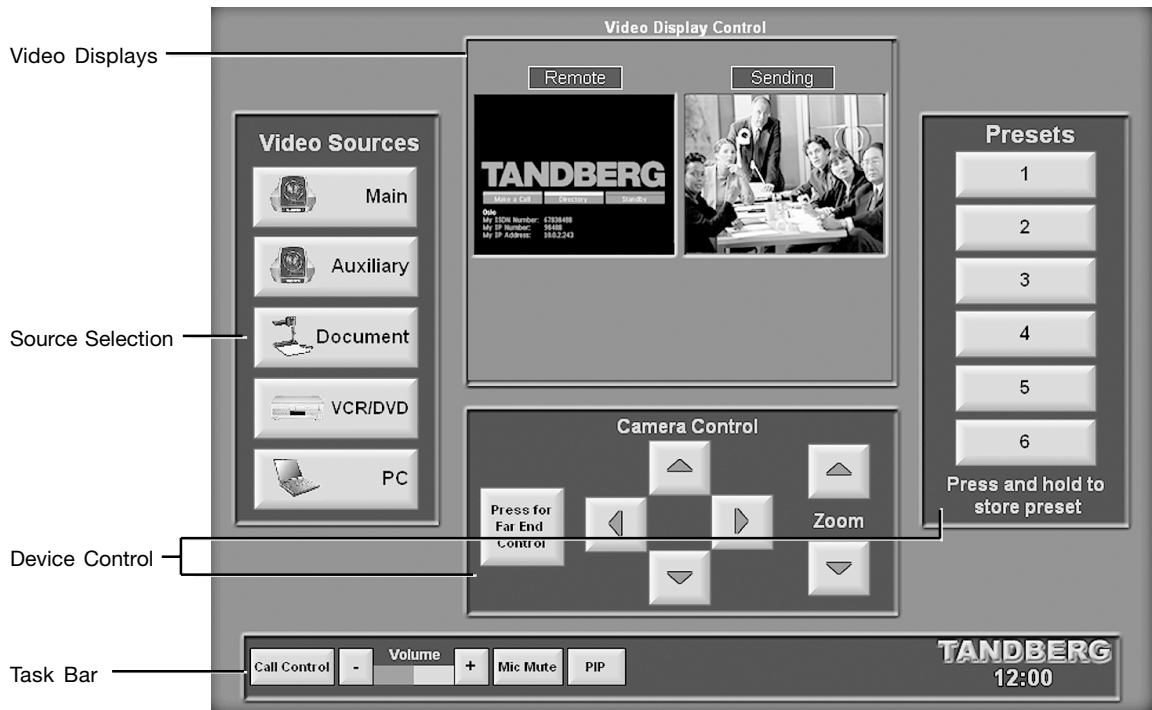
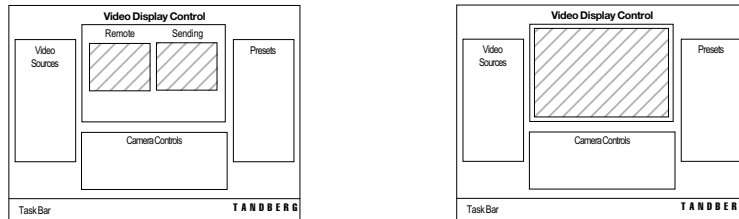
When an incoming call connects the user will be automatically taken to the **Videoconference Main Screen**, otherwise on the **TASKBAR** select the **VIDEOCONFERENCE** button to access the **Call Control Screen**.



## Videoconference Main Screen

When a call has been established the conference operation is run from this screen. The fundamentals of SOURCE SELECTION and DEVICE CONTROL mirror that of **Local Display Operation**.

The conference screens displayed are both **REMOTE** and **SENDING** video side by side, as in a typical dual screen videoconference arrangement. Touching either video screen will maximize that particular screen for an enlarged view. Touching the screen again will return to both conference screens.

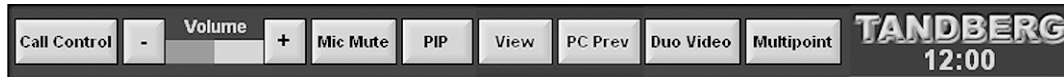


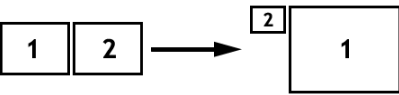

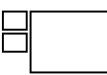
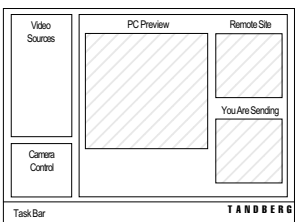
The control contents on the screen are the same as the LOCAL DISPLAY OPERATION screen:

- VIDEO DISPLAYS** shows both the LOCAL VIDEO source and the REMOTE SITE
- DEVICE CONTROL** presents controls specific the chosen video source will be displayed. If the device has no associated controls this area will be blank.
- SOURCE SELECTION** allows the available video sources to be selected.
- TASKBAR** is where the functions relevant to the current system operation will be displayed.

## Videoconferencing Taskbar

The **TASKBAR** present at the bottom of the screen provides controls relevant to the videoconference operation. The buttons will change depending on the display status. The button border and text will illuminate red when it is activated.



<b>CALL CONTROL</b>	Returns to <b>Call Control screen</b> to disconnect current call or add a MultiSite <sup>TF</sup> Call.
<b>VOLUME</b>	Increases or decreases the local volume level within the room by using the arrow buttons. The level bar indicates the current level setting.
<b>MIC MUTE</b>	Disables sound from all microphones within the room. While the mute is active the button border and text is blinking red and an on screen, mic off icon appears. De-activate by pressing Mic Mute again.
<b>PIP</b>	This inserts, moves and removes the picture in picture image on the remote site screen.
<b>VIEW</b>	<p>Pressing <b>VIEW</b> will change the conference screens from the traditional dual view to an enlarged remote site screen and a reduced confidence screen (self-view).</p>  <p>Touching either video screen (remote or sending) will maximize that particular screen for an enlarged view. Touching the screen again will return you to the last arrangement of conference screens.</p>
<b>PC PREVIEW</b>	<p>Displays the PC contents as a local preview only in a large screen with the remote and sending sources in smaller views. While in PC Preview, the far end does not see your PC source.</p> <p>The video source panel will display three buttons specific to PC Preview:</p> <p><b>TRANSMIT PC</b> takes you out of PC Preview mode and transmits the PC source to the far end. By doing this the conference screens will re-orient to the traditional dual view. </p> <p>To return to PC Preview you must first select another source.</p> <p><b>EXIT</b> returns to the previous conference view.</p> <p><b>ENLARGE</b> enlarges the PC Preview window and also displays remote and sending confidence screens. </p> 
<b>DUOVIDEO<sup>TF</sup></b>	When DuoVideo <sup>TF</sup> is possible this button will be displayed. Selecting this will initiate the DuoVideo <sup>TF</sup> connection and take the user to the DuoVideo <sup>TF</sup> control screen. See DUOVIDEO <sup>TF</sup> OPERATION.
<b>MULTIPOINT</b>	Gives the user access to Multipoint control screen.

# Technical Description

## BANDWIDTH

H.320 up to 2 Mbps  
H.323 up to 3 Mbps

## VIDEO

Video Standards  
H.261, H.263, H.263+, H.263+ + (Natural Video<sup>TF</sup>)

## VIDEO FEATURES

Intelligent Video Management<sup>TF</sup>  
8 combined presets  
XGA Output Resolution  
Optional rear monitor  
Frame Rates  
15 frames per second @ 56 - 128 kbps  
30 frames per second @ 168 kbps - 3 Mbps  
60 fields per second @ 768 kbps - 3 Mbps (Natural Video<sup>TF</sup>)

## VIDEO FORMAT

NTSC or PAL

## LIVE VIDEO RESOLUTIONS

Native NTSC:  
4SIF (704 x 480 pixels), Digital Clarity<sup>TF</sup>  
Interlaced SIF<sup>TF</sup> (352 x 480 pixels), Natural Video<sup>TF</sup>  
SIF (352 x 240 pixels)  
Native PAL:  
4CIF (704 x 576 pixels), Digital Clarity<sup>TF</sup>  
Interlaced CIF<sup>TF</sup> (352 x 576 pixels), Natural Video<sup>TF</sup>  
CIF (352 x 288 pixels)  
QCIF (176 x 144 pixels)  
SQCIF (128 x 96 pixels) decode only  
Native PC Resolutions:  
SVGA (800 x 600 pixels)  
VGA (640 x 480 pixels)  
XGA (1024 x 768 pixels)

## SNAPSHOT TRANSFER

CIF, 4CIF, H.261 Annex D, 4SIF, VGA, SVGA, XGA  
Video Inputs (5 inputs)  
2 x PTZ controllable room cameras  
1 x RCA / Phono, composite: Document camera  
1 x RCA / Phono, composite: VCR / DVD  
1 x XGA: PC

## VIDEO OUTPUTS (4 OUTPUTS)

1 x XGA Display (Multi Image)  
1 x composite: main monitor  
1 x composite: local display  
1 x touchpanel display (XGA)

## XGA INPUT / XGA OUTPUT

Input: 640 x 480 – 1024 x 768  
56 - 85 Hz.  
Output: 1024 x 768, 60 Hz

## AUDIO

Audio Standards  
G.711, G.722, G.722.1, G.728

## AUDIO FEATURES

Four separate acoustic echo cancellers  
Audio mixer  
Automatic Gain Control (AGC)  
Automatic noise reduction (NR)  
VCR ducking

## AUDIO INPUTS (6 INPUTS)

1 x Director mic, 24V phantom powered, XLR connector  
1 x additional AudioScience mic, 24V phantom powered, XLR connector  
1 x additional Table Top mic, 24V phantom powered, XLR connector  
1 x RCA / Phono, Line Level: VCR input  
2 x RCA / Phono, Line Level: Auxiliary source inputs

## AUDIO OUTPUTS (3 OUTPUTS)

1 x Line Level: Main Audio  
2 x RCA / Phono, Line level: VCR out / Aux out (mixed far and near)

## FEATURES

MultiSite<sup>TF</sup>  
ISDN & IP Downspeeding<sup>TF</sup> at call set-up  
Dial in / Dial out capabilities  
Continuous Presence or Voice Switched  
Chair control for host system  
5 sites including min. 1 telephone call  
Built-in MultiSite<sup>TF</sup> audio bridge for up to 5 sites  
DuoVideo<sup>TF</sup>, Digital Clarity<sup>TF</sup>, Natural Video<sup>TF</sup>  
MultiSite<sup>TF</sup> over IP  
4 sites @ 64 - 768 kbps + 1 telephone call via ISDN  
3 sites @ 64 - 1 Mbps + 2 telephone calls via ISDN  
Point-to-point @ 3 Mbps + 3 telephone calls via ISDN  
MultiSite<sup>TF</sup> over ISDN PRI/E1 (T1)  
4 sites @ 56 - 512 (384) kbps + 1 telephone call via ISDN  
3 sites @ 56 - 768 (512) kbps + 2 telephone calls via ISDN  
Point-to-point @ 56 - 1.5 (1) Mbps + 3 telephone calls via ISDN  
MultiSite<sup>TF</sup> over ISDN/BRI  
4 sites @ 256 kbps or 3 sites @ 384 kbps  
4 sites @ 56 - 192 kbps + 1 telephone call via ISDN  
3 sites @ 56 - 256 kbps + 2 telephone calls via ISDN  
Point-to-point @ 56 - 512 kbps + 3 telephone calls via ISDN  
MultiSite<sup>TF</sup> (H.243) Cascading  
Up to 10 video sites @ 768 kbps + 4 audio sites  
Any combination of IP & ISDN connections (transcoding)  
DuoVideo<sup>TF</sup> available on all networks  
DuoVideo<sup>TF</sup> available in MultiSite<sup>TF</sup> (over IP and ISDN)  
**PRESENTATIONS AND COLLABORATION (ISDN, IP AND LEASED E1/T1)**  
Natural Presenter Package including:  
PC Presenter<sup>TF</sup>  
PC SoftPresenter  
Digital Clarity<sup>TF</sup>  
DuoVideo<sup>TF</sup>  
T. 120 Microsoft Netmeeting support via IP (H.323) (PC not included)

Streaming (compatible with Apple Quick Time and Real Player v8 etc)

#### NETWORK FEATURES

Auto H.320 / H.323 Dialing  
 H.331 Broadcast mode  
 Downspeeding<sup>TF</sup>  
 Programmable Network Profiles  
 Password Protection  
 Intelligent Call Management<sup>TF</sup>  
 Maximum call length timer  
 HØ on ISDN-PRI facility  
 NATO standard KG194 encryptor support  
 Automatic SPID and Line Number Configuration  
 (National ISDN, GR-2941-CORE)  
 SoftMux<sup>TF</sup>

#### EMBEDDED ENCRYPTION

H.320 and H.323 point-to-point and multipoint calls  
 Standards-based: H.233, H.234, H.235, DES and AES  
 Automatic key generation and exchange  
 Supported in DuoVideo<sup>TF</sup>

#### H.323 NETWORK FEATURES

Differentiated Services (DiffServ)  
 Resource Reservation Protocol (RSVP)  
 IP precedence  
 IP type of service (ToS)  
 Network Address Translation (NAT) support  
 IP adaptive bandwidth management (including flow control)  
 Auto gatekeeper discovery  
 Dynamic playout and lip-sync buffering  
 Intelligent Packet Loss Recovery<sup>TF</sup> (IPLR<sup>TF</sup>)

#### SECURITY FEATURES

IP Password  
 Access code  
 Streaming password  
 H.243 MCU password  
 VNC password  
 Possibility to disable IP services

#### NETWORK INTERFACES

6 x ISDN BRI (RJ-45), S-interface  
 1 x E1 / T1 G.703 (RJ-45) for ISDN PRI or leased E1 / T1  
 1 x E1 / T1 (RJ-45) for ISDN PRI cascading  
 1 x LAN / (RJ-45) 10/100 Mbit  
 1 x X.21 / V.35/RS-449 with RS-366 dialing, Leased Line  
 or data triggered mode

#### ETHERNET / INTERNET / INTRANET CONNECTIVITY

TCP/IP, SNMP, DHCP, ARP, FTP, Telnet, HTTP, Internal web  
 server  
 Support for the TANDBERG Management Suite  
 Internal streaming server  
 10/100 Mbit full / half duplex (manual or auto detect selection)

#### OTHER SUPPORTED ITU STANDARDS

H.320, H.323, H.281, Bonding (ISO 13781), H.231, H.323, H.331

#### MANAGEMENT

Local System Management  
 Optional 12" (VGA) or 15" (XGA) Touch Panel or Optional  
 SMART Board<sup>TM</sup> Control  
 Remote System Management  
 Management via web browser, Telnet, FTP and SNMP, TMS  
 Remote/Local diagnostics and upgrades via modem or IP

#### Local Site Features

External device control protocol  
 Password Protection  
 XGA Presentation

#### SPEED DIAL AND 200 NUMBER DIRECTORY

#### POWER

Auto-sensing power supply  
 System power control management  
 100 - 250V AC, 50 - 60 Hz, 4Amps

TF indicates a TANDBERG First

System features vary depending on network selection  
 and software package. All specifications subject to  
 change without notice.

# Abbreviations

AGC	Auto Gain Control	Mic	Microphone
ARP	Address Request Protocol	MSN	Multiple Subscriber Number
Aux	Auxiliary	NAT	Network Address Translator
BNC	Bayonet Connector	NR	Noise Reduction
BRI	Basic Rate Interface	NSF	Non Standard Facility
CCD	Charge Couple Device	NT	Network Terminator
CD	Collision Detection	NTSC	National Television Systems Committee
CE	Communittee European	PABX	Private Automatic Branch Exchange
CIF	Common Intermediate Format	PAL	Phase Alternation Line
Codec	Coder/Decoder	PBX	Private Branch Exchange
CPE	Customer Premise Equipment	PC	Personal Computer
CRC	Cyclic Redundancy Checking	PIP	Picture-In-Picture
CSA	Canadian Standards Association	PRI	Primary Rate Interface
CSU	Channel Service Unit	QCIF	Quarter Common Intermediate Format
CTS	Clear To Send	QoS	Quality of Service
DHCP	Dynamic Host Configuration Protocol	RTS	Ready To Send
DSU	Data Service Unit	SIF	Source Input Format
DTR	Data Transfer Rate	SNMP	Simple Network Management Protocol
DTX	Discontinuous Transmission	SPID	Service Provider IDentification
DVD	Digital Versatile Disc	SQCIF	Sub-Quarter Common Intermediate Format
ESF	Extended Super Frame	SVGA	Super Video Graphics Array
FECC	Far End Camera Control	TCP/IP	Transmission Control Protocol/Internet Protocol
FTP	File Transfer Protocol	TCS	Terminal Control String
HCS III	Health Care System III	TOS	Type Of Service
ICIF	Interlace Common Intermediate Format	TTL	Time To Live
ICM	Intelligent Call Management	UL	Underwriters Laboratories
IEC	International Electrotechnical Commission	VCR	Video Cassette Recorder
IMUX	Inverse Multiplexer	VGA	Video Graphics Array
IR	Infrared Radiation	VISCA	Video System Control Architecture
ISDN	Integrated Services Digital Network	VNC	Virtual Network Computing
ISIF	Interlace Source Input Format	WAN	Wide Area Network
LAN	Local Area Network	WAVE	Wide Angle View
LCD	Liquid Crystal Display	XGA	Extended Graphics Array
MCU	Multi-point Control Unit		



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# Servicing

Do not attempt to service the apparatus yourself, otherwise the warranty will be voided. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

## Damage Requiring Service

Unplug the apparatus from the outlet and refer servicing to qualified personnel under the following conditions:

When the power cord or plug is damaged or frayed.

If liquid has been spilled or an object has fallen into the apparatus.

If the apparatus has been exposed to rain or moisture.

If the apparatus has been subject to excessive shock by being dropped.

If the apparatus does not operate normally when following the operating instructions.

Note: TANDBERG will provide on request circuit diagrams and component parts list of the system.

For servicing, please call one of the following service centres:

### USA

TANDBERG Inc.  
1860 Michael Faraday Drive  
Suite 250  
Reston, Virginia, USA 20190

Tel: 703-709-4281  
Toll free: 800 889 7440  
Fax: 703-709-4231  
Video: 703 437 6991

### Canada

TANDBERG Canada Inc.  
6505 TransCanada Highway  
Montreal, Quebec  
H4T 1S3

Tel: 514 748 5224  
Fax: 514 748 1002  
Video: 514 748 7790

### Europe & Asia Pacific

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1325 Lysaker, Norway